

THE

Desert

M A G A Z I N E



AUGUST, 1945

25 CENTS



STORY OF THE SHEEPMAN IS TOLD WITHOUT GLAMOR

Three animals played major roles in Southwestern history, all of them gifts of old Spain. They modified the lives of white man and Indian alike; they provided the basis for the folklore and drama of the Southwest. The horse, which made the Comanche a warrior and the Anglo-American a cowboy, has finished his role. The Longhorn has disappeared. But the sheep stays on and his importance is even increasing.

His story, from his ancient beginnings in Africa and Spain to the present intensive experimental stage, is told by Winifred Kupper in *THE GOLDEN HOOF*, dedicated to J. Frank Dobie and published in May 1945 by Alfred A. Knopf, New York. It is the story of sheep and of the men who moved with them through Texas and New Mexico, of the Indians and cowmen and squatters and wolf packs and blizzards and droughts that beset their progress.

Mrs. Kupper has not had to rely solely on the rather extensive bibliography she lists or even on tales of the old sheepmen, for she was born and raised on a sheep ranch at Bandera, Texas. She started out to be a sheepwoman as a child under the wise tutelage of one of the old-timers, Robert Maudslay—and when she walked out on the range with her flock, she was no picture of elegance. For she says, that was years before "the dudes from the East were to

show us what a young girl should wear in the West."

"When the writers of immigration booklets began the campaign that was to lure thousands to the unsettled Southwest they pictured a Utopia where a man had only to camp out-of-doors and watch his sheep nibble the thick grass day after day while he enjoyed the cool breezes of summer and the warm sunlight of winter." But that isn't the picture the author gives of the sheep industry. There was the colorful, traditional side, to be sure, but with a first-hand knowledge of all its phases, she does not omit the prosaic work of everyday nor minimize the hardships and the dangers of Indians, hostile cattlemen, predator animals and the elements.

One of the many interesting chapters deals with the Navajo woman, who is both herder and weaver, and who more than anyone else in the Southwest has made the sheep business a career and a creative life.

Frontispiece from oil painting by N. C. Wyeth. Bound in red cloth stamped in gold, printed on goldenrod. 203 pp. \$2.75.

CHINLEE RUG DESCRIBED IN NAVAJO TEXTILE SERIES

The beautiful Chinlee rugs of the Navajo Indians, recognized by their color schemes which include various shades of yellows and browns, warm or greenish greys, dull lake and brownish reds and a

subdued pink, besides pastel shades, are the result of an interesting collaboration.

L. H. (Cozy) McSparron, Indian trader at Chinlee, Arizona, and Miss Mary Cabot Wheelwright, interested in the economic status of Navajo weavers, inaugurated experiments to eliminate both the cold drab effect of many of the native vegetable dyes and the gaudiness of the cheap aniline dyes. Through Miss Wheelwright's influence the Du Pont chemical corporation made up a number of easily handled dye stuffs in shades which were intended to duplicate those seen in the old faded and mellowed blankets so highly prized by collectors. Although this experiment started at Chinlee (where it acquired its name), the style since has spread to other parts of the Navajo reservation.

History and description of the Chinlee blanket are given in one of the most recent of the bulletins published by Laboratory of Anthropology at Santa Fe, New Mexico. To date 16 bulletins in the General Series, relating to various types of Navajo textile arts, have been printed.

Some of the other types treated in the series are, the Chief Blanket, Blankets of the Classic Period, Slave Blanket, Pictorial Blankets, Navajo Woven Dresses. Each is $4\frac{3}{4} \times 5$ inches, bound in stiff art paper and printed on fine book paper. There are many illustrations, including halftone plates, depicting the finest available examples of each type of textile. A set of 13 bulletins is now available at \$3.25.

BOOK BRIEFS . . .

Dictionary of California place names is being prepared by Dr. Erwin G. Gudde to be published "in something over a year from now" by University of California Press, Berkeley. It will be a "large book and as authentic as honest and careful scholarship can make it." On advisory committee is George R. Stewart, American literature teacher at UC, whose *Names on the Land*, first general history of place naming in US, recently was published by Random House.

Dr. Agapito Rey, professor of Spanish at Indiana University, has been in Albuquerque this summer collaborating with Dr. G. P. Hammond, University of New Mexico, on another in their Coronado historical series on the Southwest. Series includes *The Narratives of the Coronado Expedition*. Their latest work, *Benavides Memorial on New Mexico*, is being published by University of New Mexico Press.

Rosemary Taylor, following her success with *Chicken Every Sunday*, is producing more books with an Arizona setting. She has just completed *Ridin' on a Rainbow*, a story using her father's life as the theme, as the first was about her mother, and now is writing another, *Floradora on a Pony*, based on the famous 76 ranch and its owner Mrs. W. T. Webb.

Canyon Country

The Romance of a Drop of Water and a Grain of Sand

By JULIUS F. STONE

With 300 halftone plates, this book is a graphic presentation of the natural processes of uplift and erosion by which America's most scenic gorge was created. The author is one of the recognized authorities on the geology of the Grand Canyon country.

This book has long been out of print, but Desert Crafts Shop has obtained a limited number of new copies which will be sent postpaid at the publisher's original price of

\$5.00

Write for our complete list of books of the Southwest.

DESERT CRAFTS SHOP

El Centro, California

DESERT

Close-Ups

• According to the Navajo, their sheep came to them as a gift of the gods. Little Lefty, Richard Van Valkenburgh's host on one of his trips through Navajoland, told him the story as the old singers of the tribe have told it. Van's version of the introduction of sheep to the Southwest and of the first Navajo weaving, differs from the legendary history—but Van has written both versions for DESERT readers, to be presented in a coming issue.

• John W. Hilton, artist-writer who has contributed many gem field trips and other features for DESERT, has had one book accepted and another contracted for. His *Sonora Sketchbook*, telling of his experiences in Mexico and illustrated with his drawings, is scheduled for early 1946 publication by the Macmillan company. The second will be another sketchbook featuring Coachella Valley desert area. In between writing, John continues to paint. He recently completed two paintings while in Death Valley.

• Louise Baker's *Party Line*, published last spring by Whittlesey House, was condensed in the July issue of *Reader's Digest*. Both Louise and her husband Sherman Baker are DESERT writers.

• Natt N. Dodge believes the story of of the saguaro disease, which he tells about in this issue, will go down as one of the classics in the series of revelations about the inter-relationships of plant and animal life. Natt, who has written numerous features for DESERT in the past, is a naturalist in the National Park Service. He was stationed at Southwestern National Monument headquarters, Coolidge, Arizona, when he first contributed to DESERT. He later lived at Santa Fe, New Mexico, when headquarters was moved there. Just recently he was assigned to the Chicago office.

• Jerry Laudermilk, DESERT writer and professor at Pomona College, Claremont, California, in July was appointed curator of the college museums, which house many rare fossils and other items of interest to desert minded people. He estimates there are at least "10,000 thousand stories here."

CREED OF THE DESERT

By JUNE LE MERT PAXTON
Yucca Valley, California

The desert weaves a web to entrap,
And does the task quite neatly;
For he who comes back here too oft,
Enmeshed is he, completely.



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The Desert Magazine is published monthly by the Desert Publishing Company, 636 State Street, El Centro, California. Entered as second class matter October 11, 1937, at the post office at El Centro, California, under the Act of March 3, 1879. Title registered No. 358365 in U. S. Patent Office, and contents copyrighted 1945 by the Desert Publishing Company. Permission to reproduce contents must be secured from the editor in writing.

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Unsolicited manuscripts and photographs submitted cannot be returned or acknowledged unless full return postage is enclosed. Desert Magazine assumes no responsibility for damage or loss of manuscripts or photographs although due care will be exercised. Subscribers should send notice of change of address by the first of the month preceding issue. If address is uncertain by that date, notify circulation department to hold copies.

SUBSCRIPTION RATES

One year \$2.50

Canadian subscriptions 25c extra, foreign 50c extra.

Subscriptions to Army personnel outside U.S.A. must be mailed in conformity with P.O.D. Order No. 19687.

Address correspondence to Desert Magazine, 636 State St., El Centro, California.

Nature Sets New Booby Traps

By NATT N. DODGE

To protect the cattle grazing in Kaibab forest on the North Rim of Grand Canyon, man began killing off the cougars. Then the deer, with their natural enemies disappearing, began to increase—and soon the cattle were worse off than ever—the deer were devouring the range. That is what happens when man disturbs the fine balance which Nature normally maintains. And now the same thing is happening in southern Arizona—and the victim this time is the majestic saguaro—state flower of Arizona. This story is not very flattering to the human species—nevertheless, it contains facts which we must face.

NATURALISTS sometimes illustrate how Nature keeps her world in balance by telling the story of the old maids and the bumblebees.

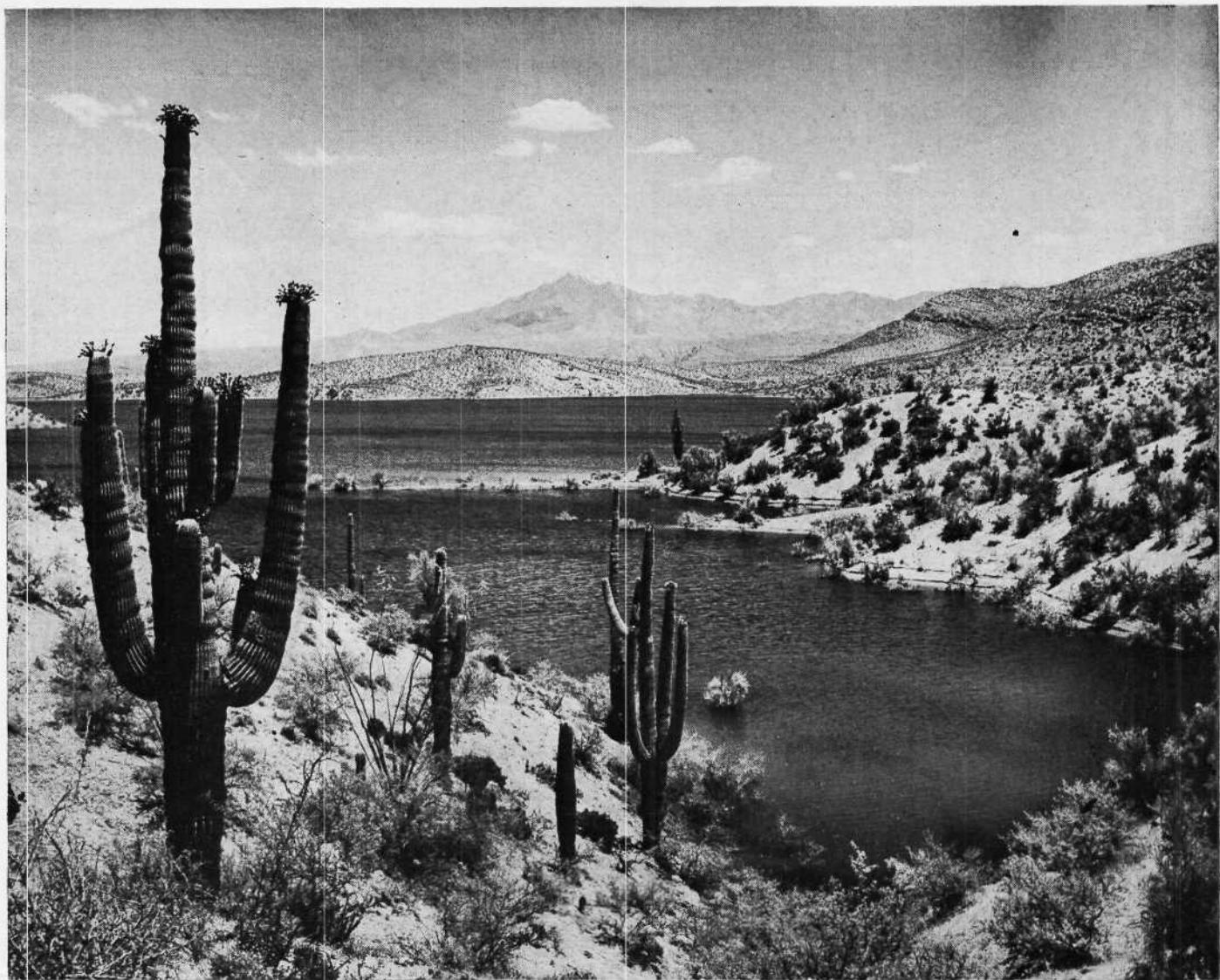
In an eastern farming community, so the story goes, there were many maiden ladies. They all owned cats. The cats, as cats will, scoured the barns and fields for mice. As a result of the reduction of field mice, which raid ground bees' nests, bumblebees increased rapidly and so were able to make a thorough job of pollenizing all the red clover blossoms with a consequent heavy set of seed. Sale of the clover seed so increased the prosperity of the many young farmers in the community that they could afford to marry, thus absorbing the supply of eligible girls. Soon there were no old maids and very few cats; mice increased, reducing the bumblebees, with a proportionate lessening of clover pollination and a drop in seed production. Young men starting to farm under these unfavorable conditions were unable to marry, a new crop of spinsters and cats developed, the population of mice decreased, and the cycle started all over again.

Although obviously absurd, the foregoing does serve to illustrate the ramifications in Nature and the far-reaching and sometimes spectacular developments resulting from an apparently insignificant change. Under normal conditions, Nature compensates for such changes, the effect itself often producing the remedy for the cause. Through a natural system of checks and balances, the pendulum of normal change swings slowly back and forth with no adverse effect upon the various complicated inter-relationships of plant and animal life.

Sometimes, however, an abnormal factor may enter the picture and, by removal of one of the checks or controls, so throw the pendulum off balance that instead of swinging back, it continues forward at an ever accelerated pace. Usually the disturbing factor is some activity of mankind that



Field man for the Bureau of Plant Industry, Soils and Agricultural engineering examines a cactus under treatment for the disease that now threatens the saguaro forests. National Park Service photo.



Giant saguaros near San Carlos lake in Arizona. Photo by Josef Muench.

interferes with the normal and orderly processes of Nature. The perturbing and painful part of this upset of Nature's balance is that the final outcome usually produces a serious disturbance in some entirely unrelated project of mankind in an alarming and quite unexpected manner. In an attempt to adjust the aberration and get Nature back on her normal path again, mankind may find the situation so painful that he will apply the newly gained knowledge to future activities. And then, again, he either doesn't learn the lesson well enough or else time dulls his memory and before he realizes the fact, he has blundered into another booby trap.

Classic among the unhappy experiences which we in the Southwest have had with an unbalanced set of natural conditions is that started on the Kaibab plateau of northern Arizona in 1906.

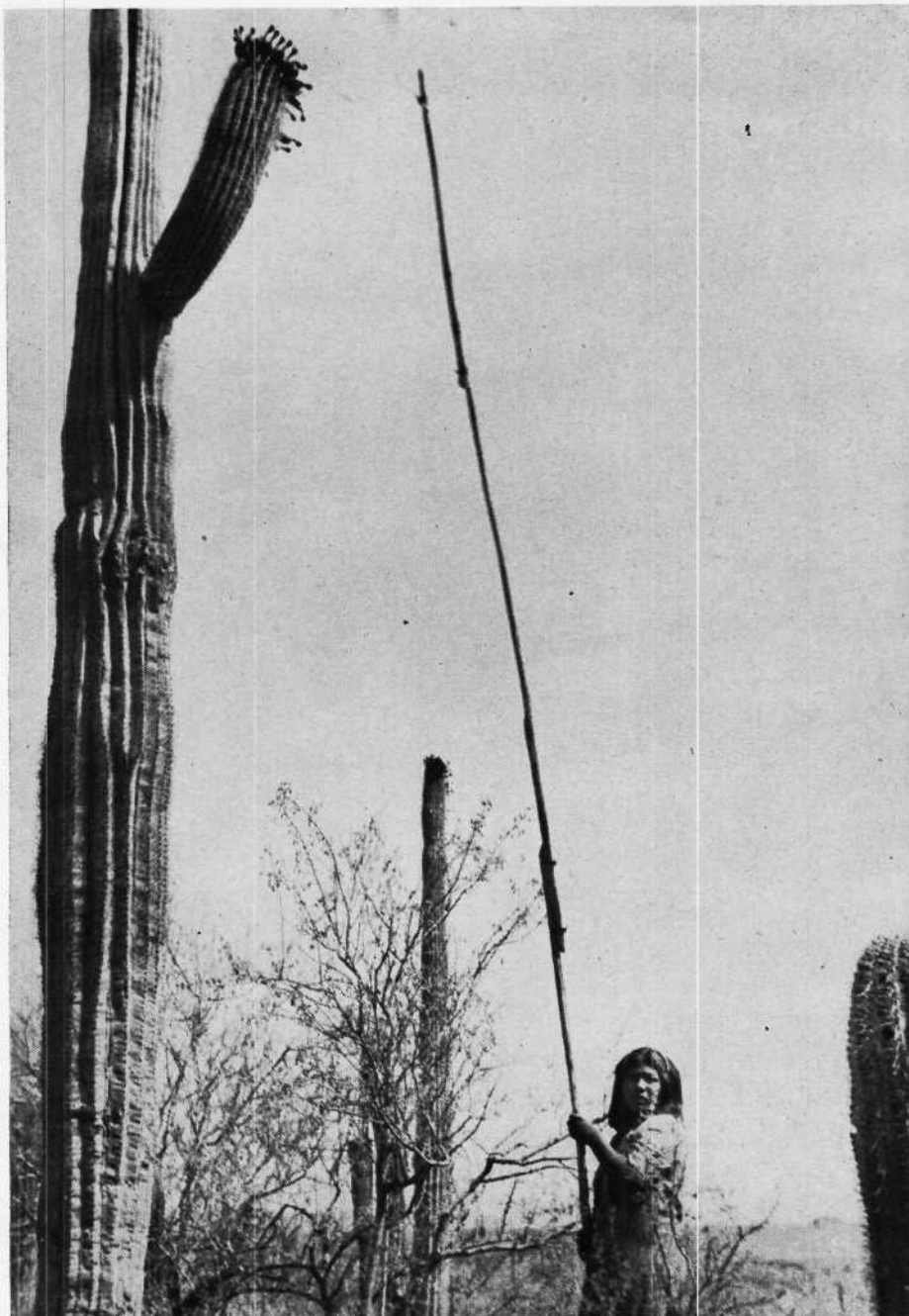
A beautiful wilderness, the Kaibab was covered with great forests of Ponderosa pine, piñon and juniper, with spruce and fir at the higher elevations. Extensive sub-alpine meadows kept green by the heavy

snows of winter offered verdant summer ranges adequate for hundreds of cattle. It is little wonder that stockmen took advantage of them as early as 1885. As might be expected, the mountain lions of the Kaibab began taking a toll of calves, and vengeful cattlemen opened a war of extermination upon them. In 1906 the Kaibab, an area of 727,000 acres, was set aside as the Grand Canyon national game preserve. Killing of deer was prohibited, and government hunters were sent into the area to kill mountain lions and coyotes. Famous among these hunters was Uncle Jim Owens who claims to have destroyed more than 600 lions from 1907 to 1919.

Under normal conditions, an adult cougar kills and eats approximately 50 deer per year. Unlike the human hunter who seeks the largest, heaviest buck or the one bearing the widest spread of antlers, the mountain lion hunts for food finding the slow, the stupid, the crippled the diseased, or the old—its easiest prey. In this manner under normal conditions, the cougar tends to keep down any excess deer popu-

lation and at the same time leaves the smartest, the swiftest and the more vigorous as breeding stock. This is a fundamental law of Nature known as "survival of the fittest."

By 1913 there were 15,000 cattle and 5000 sheep on the Kaibab. The all-out campaign of cougar destruction was well underway and deer were increasing rapidly. From an estimated less than 10,000 deer in 1906, the herds grew rapidly until by 1922 there were somewhere between 30,000 and 50,000 deer on the Kaibab. Grass and browse which had been ample for both deer and cattle, now was at a premium. Suddenly the stockmen came to a rude awakening. A new and thousandfold more dangerous enemy appeared on the horizon. The great herds of deer, like a plague of locusts, were eating the cattle out of house and home. Not only were the cattle being starved out, but the deer themselves were gaunt and weak and in their frantic search for food they were denuding the soil of its cover and rapidly paving the



*Papago Indians harvest tons of saguaro fruit every summer.
National Park Service photo.*

way for that great enemy of all agricultural pursuits, erosion.

Among the many species of plants to suffer by this increase of deer, the most spectacular was the quaking aspen, a beautiful birch-like tree that adds grace and color to the dark green, coniferous forests of the Kaibab. Small trees were stripped of their branches as high as the deer could reach, young shoots were nipped off at the ground, and not a new sprout succeeded in lifting its head above the soil for more than a decade. For ten years or more, reproduction of aspen on the Kaibab was blotted out.

In protecting the calves, cattlemen and government hunters removed from the Kaibab the cougar, a vital factor in Na-

ture's set of checks and balances. In removing this check, they unleashed uncontrolled forces of destruction which rapidly gained momentum. Not only were thousands of starving deer forcing cattle and sheep from the Kaibab ranges, but they were threatening the people of the United States with a grave calamity, for the Kaibab and the North Rim of the Grand Canyon were destined to become one of the world's popular tourist attractions bringing to the people of northern Arizona and southern Utah millions of tourist dollars each summer season. To protect the calves, the cougars were killed. No cougars—thousands of deer! Too many deer—no grass, no shrubs, no aspen—erosion began its insidious work. No grass, no shrubs, no aspen,

accelerated erosion—no visitor attractions, hard times for countless hotel and innkeepers and service stations.

It took a thoroughly aroused nation to check the threatened calamity and gradually restore the balance of Nature to the Kaibab. The United States forest service with the help and cooperation of the Arizona game and fish commission gradually has reduced the Kaibab deer herd to approximately 17,000 animals, an optimum number for the particular conditions. Hunting, predator activities, grazing, and other uses of the Kaibab are carefully controlled and managed.

Today, the history of that experience is one of the classic stories of conservation in America, and the basic truths that it taught us should be engraved forever on the nation's memory.

But the scars of that near-tragedy scarcely have healed when we become aware that man has been making a similar blunder in another part of Arizona. Failing to understand the fine balance which Nature maintains, he again is facing the penalty for his lack of foresight.

The innocent victim of man's latest folly is none other than the giant cactus, the state flower of Arizona—the majestic saguaro.

To tell the story, it will be necessary to go back in history to the period when Tucson was a little frontier community in a land of wild Apaches.

Tucson was then a woodburning town, and in the 1800's it took a lot of wood to feed its fires. Mesquite and ironwood made the best fuel, and woodcutters ranged farther and farther afield stripping the desert washes of the needed wood. Lime kilns along the base of Tanque Verdes took heavy toll. Need for fence posts increased demands, and the face of the desert soon began to change. Civilization had come to the great Southwest. Cattle grazed where once lay deep shadows of dense mesquite groves, and the blue-grey smoke of a thousand pungent fires floated toward the Catalinas.

Time passed, and Tucson grew. Cattle ranged more widely and the grass upon which they fed began to thin. Coyotes learned to favor veal. Then guns, traps and poisoned baits were turned against them, just as they were turned against the cougars on the Kaibab. And just as the deer responded to the thinning ranks of the mountain lions, so the desert rodents—the kangaroo rat and the ground squirrel, the wood rat, and all their aunts, and uncles, and cousins took advantage of the coyotes' troubles to increase their families in a big way. The desert, already reeling under the blows of the woodcutters and the trampling hooves of cattle, was set upon by ever increasing hordes of rodents. Prickly pear, cholla and ocotillo—those tough and hardy desert denizens unpalatable alike to steer

and rat, gradually became the prominent survivors.

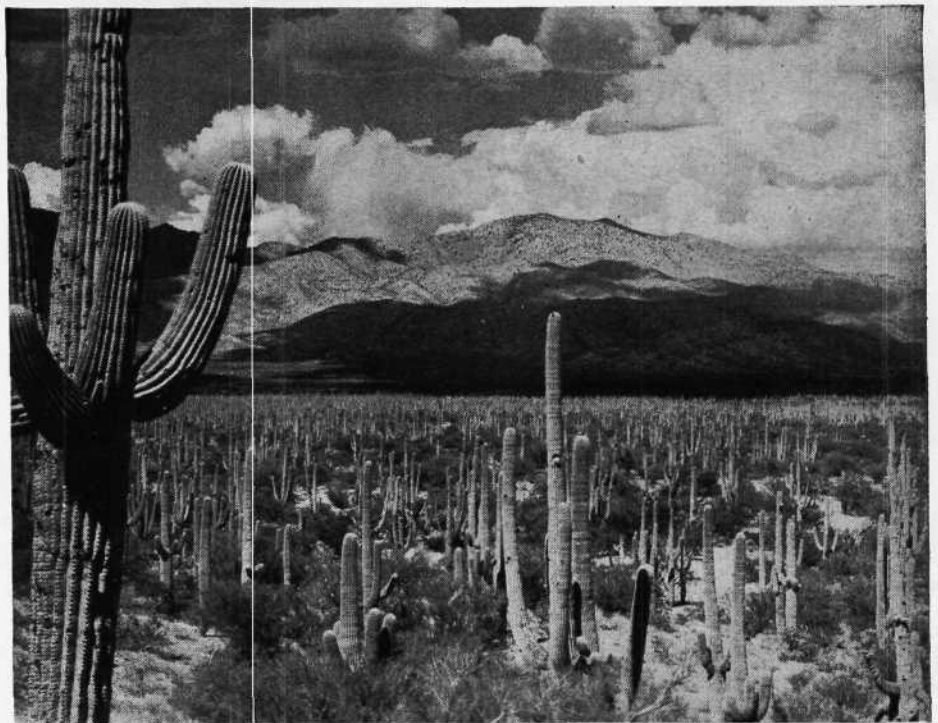
But what about the saguaros? How were they faring during this gradual change? Apparently they were unaffected, their hulking forms towering in gargantuan austerity over the desert small fry. Like Methuselah, they live forever. But do they? Ask Dr. Forrest Shreve, grand old wizard of desert botany and ecology who has been prying into the private lives of saguaros for decades. Ask Dr. J. G. Brown of the University of Arizona who recently discovered the bacterium causing the disease that for the past five years has been toppling the tough old giants of the famous cactus forest. Ask Dr. James Mielke of the U. S. Bureau of Plant Industry, Soils, and Agricultural Engineering. Ask Don Egermayer, custodian of Saguaro national monument. Ask these men what is happening to the saguaro.

No, the giant cactus is neither invulnerable nor everliving. True, its life span may spread over two centuries, although the majority of individuals do not pass the 150 year mark. But here's the catch: in the heavily grazed and cut-over areas, there are no young saguaros! And, what is more, there probably never will be. Once the present old-timers are gone, the saguaro in those areas is through. This is what has happened.

It's a short story in the telling, although it took more than a century in the living. A mature saguaro in its lifetime may produce billions of seeds but only a very few, even under favorable conditions, find suitable surroundings for germination. For many generations desert Indians have harvested the fruits. Birds, rodents and insects consume the seeds. Only in suitable soil, under the protecting shade of a dense, low-growing shrub or tree does the saguaro seedling survive its infancy. Rodents consume the tiny plants for the moisture stored in the spongy tissues. Life was rugged for baby saguaros even in pre-Coronado days.

With the coming of the Spaniards, woodcutters began to remove the mesquite and ironwoods so essential to the protection of the seedlings. Crushing hooves of settler's cattle trampled out those that succeeded in establishing themselves. Rodents, freed of their coyote enemies, did a thorough job of eliminating the few that managed to run the gauntlet of the others. For years there has been little if any reproduction of saguaros in parts of the southern Arizona desert.

Why have we been blind to this fact before? It took an epidemic of saguaro necrosis, a then unknown disease of the giant cactus, to initiate the intensive studies that have brought to light the situation as it is recorded here. In the summer of 1939, Dr. J. G. Brown of the University of Arizona noticed that many of the older saguaros in the vicinity of Tucson were infected with a type of rot. The disease was particularly



Summer clouds ride the crest of the Catalina mountains—guardian range of the cactus forest. National Park Service photo.

prevalent in the great cactus forest of Saguaro national monument, 15 miles east of the city. Some of the desert giants were literally melting away.

Alarmed officials of the national park service, which administers the national monument, asked for help from experts of the U. S. Bureau of Plant Pathology, Soils and Agricultural Engineering. Radical measures to check the epidemic were put into effect and 335 of the badly diseased plants were destroyed. In the meantime, Dr. Brown had found that the disease was caused by a bacterium. Other studies showed that the disease had been prevalent among saguaro stands for centuries, in fact that it was the principal cause of the death of nearly all saguaros, but that it killed in general the older, mature plants. Thus, in a normal stand of saguaros composed of plants of all ages, its inroads were not noticeable. Only in an old stand, with few or no young plants, did its ravages assume the appearance of an epidemic.

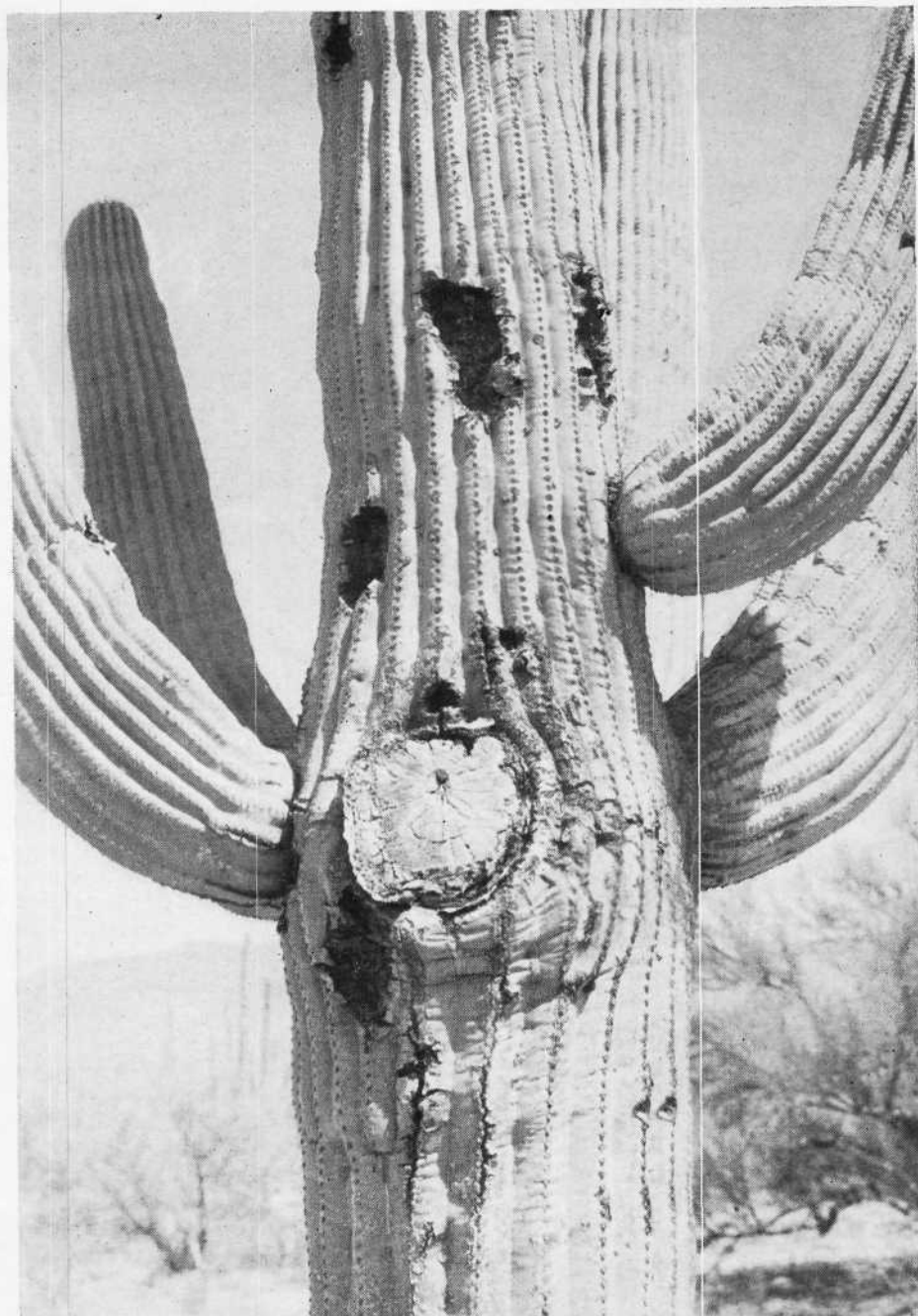
Further investigations, which still are being conducted by Dr. Brown and his students, indicate that the bacterium which causes the saguaro disease is carried by the larvae of a small night-flying moth. The larvae subsist on the tender fresh tissue of living saguaros. Gnawing their way through this tissue, they leave behind them tunnels along which spots of infection appear. These spread, gradually destroying the flesh of the plant. Frequently the whole heart of a saguaro may be a mass of decay before the presence of the disease is apparent on the outside. In other individuals, the infection breaks out as a black, running sore. Such lesions, if opened to the light

and air, readily callous over and heal. Thus, by proper treatment, it has been found possible to cure some plants and thereby slow the spread of the disease and reduce its toll.

This is the story of the woodcutters, the coyotes, the moth and the saguaros. Basically, it is similar to that of the spinsters, the cats, the mice, and the bumblebees; and to the story of the cattle, the cougars, the deer, and the aspens. Once again a little stick whittled in all innocence by man many years ago, suddenly looms as a huge club ready to smite mankind today.

"So what," you say, "what of the saguaro? It is no good anyway." That's right, in a way. The flesh is useless as stock feed, and the ribs cannot be considered as commercial lumber. Some other blossom may be declared Arizona's state flower, and only the birds and the Indians eat saguaro fruit. But do we not forget? Before the war, southern Arizona was fast becoming a tourist mecca of the West; because of its winter climate, of course. But climate isn't everything, and there are many lovers of southern Arizona to whom the desert would not be The Desert without the giant cactus. Someone has called the saguaro "camera fodder." Florida has a climate. Hawaii has climate. It is summer in Australia when it's winter in U.S.A. After the war is won and the age of air travel takes over, climate at the ends of the earth will be almost as close and easy to reach as is southern Arizona's climate now; but only Arizona has saguaros. Whether they are worth saving, as measured in tourist greenbacks, is much more than a 64 dollar question.

My story is nearly finished. Fortunately



Calloused scars and the stub of an amputated branch attest the efficacy of the treatment now being given the stricken cactus. National Park Service photo.

there remain in southern Arizona today many fine stands of the giant cactus in locations where, due to freedom from unfavorable conditions, saguaros still are reproducing. Some of these stands may be saved if action is taken promptly. How? Through the maintenance of natural conditions assuring continued normal saguaro reproduction by preventing such activities of man as interfere with or upset Nature's balances and checks. First, carefully survey the present saguaro resources of southern Arizona and determine which of the better stands show the healthiest conditions of normal reproduction. Select which of these are to be guaranteed preservation and then get tough. Be sure that the area is of sufficient

size so that it will not be subject to the ravages of outside influences, especially the various activities of mankind. If grazing is going on in the area, get rid of it now and fence it completely out for all time. Prohibit woodcutting in the area, and keep hunting under careful control. Do not permit the destruction of coyotes or other predators. That's about all there is to it. Just leave it alone, give it a chance, and the saguaros should take care of themselves—if it isn't too late.

Then, let's don't forget to pinch ourselves at regular and frequent intervals so that we won't blunder into another ecological booby trap. They are very easy to get into, even with our eyes wide open.

Date Garden Brings \$4500 Acre

Agricultural land values reached a new high in the Coachella valley of California recently when Lee J. Anderson, one of the most successful growers in that area, is reported to have paid \$90,000 for a 20-acre garden of Deglet Noor dates in mature production—\$4500 an acre.

W. G. Jenkins, from whom Anderson made the purchase, retains his home ranch, the Garden of Allah, and the private packing shed there.

Sez Hard Rock Shorty of Death Valley



"Yep! Usta be a lotta snakes 'n this Death Valley country. But not any more."

Hard Rock Shorty moved over a few inches on the bench that was a permanent fixture on the lean-to porch of the Inferno store, so one of the women in the tourist party could have a seat.

Hard Rock offered no explanation, and finally one of the tourists could restrain his curiosity no longer.

"What became of all the snakes?" he asked.

"Well, Henry Ford was the cause of it all," said Shorty. "It was a long time ago, soon after he started makin' them Model-T cars. Then the dude prospectors started comin' out here in tin lizzies lookin' for gold. An' them scientific fellers came along lookin' for bugs, and then the real estate slickers came in lookin' for townsites. They all had them new-fangled Ford cars. They didn't pay no attention to the old freight road. They just chugged off across the desert in every direction 'til this valley looked like a sand dune after the beetles had held a convention. There was car tracks in every direction."

Shorty paused to re-light his corn-cob while his audience waited impatiently for the rest of the story.

"Yep! That was the end of the snakes. They all broke their backs trying to follow them car tracks. Ain't been no snakes since."

Last February Randall Henderson started for Palm Wash to write the story of this oasis for Desert readers—and spent the afternoon with Arles Adams digging their jalopy out of the quicksand in a cienaga. More recently the trip was undertaken again—and with better luck. Palm wash has played an important role in World War II as the source of some of the best optical calcite available for gunsights.

Vanishing Oasis of Palm Wash

By RANDALL HENDERSON

MY OLD friend Henry Wilson insists that the three low hills where Pegleg Smith found his legendary nuggets of black gold are located somewhere in the vicinity of Palm wash in the Borrego badlands of Southern California.

I believe Henry is mistaken. Otherwise he would have found Pegleg's gold long ago. For Henry has tracked over that country for weeks at a time. It is rough terrain, but I doubt if there is a mound as big as an ant hill that he hasn't seen at close range.

There is lure in the Borrego badlands for those who like their desert raw and rugged—but the wealth in these eroded clay and sandstone hills is not gold. It consists of isolated palm oases, of fantastic sandstone concretions, of fossils and calcite crystals, and of barren hillsides where beavertail cactus yields some of the most beautiful blossoms on earth.

I always have suspected that these were the attractions which brought Henry Wilson back to Palm wash time after time—that it was the fascination which this wild desert terrain holds for the true outdoor man, rather than yellow metal, which brought Henry down here for long camping excursions.

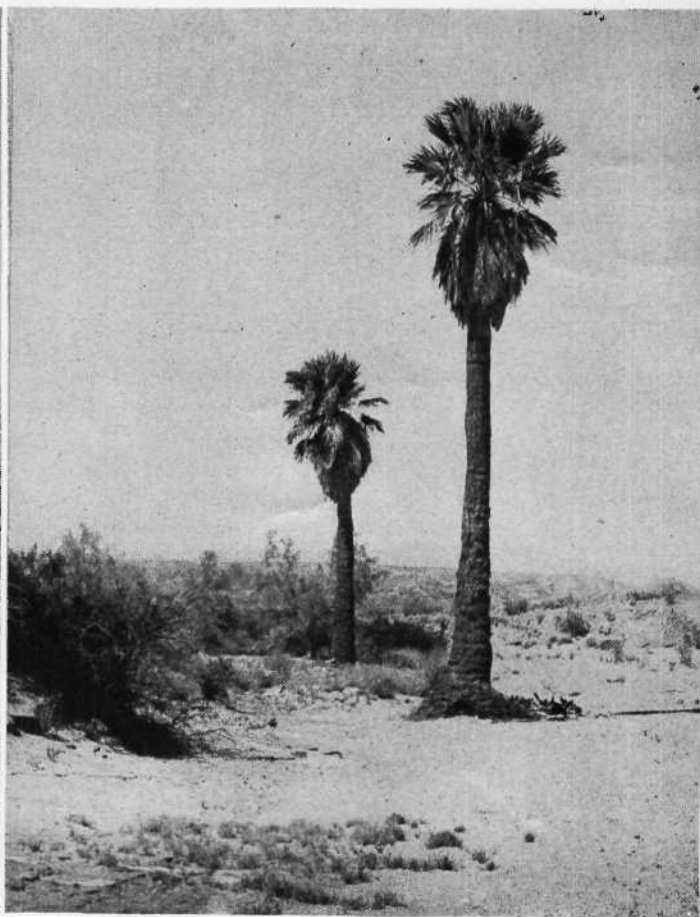
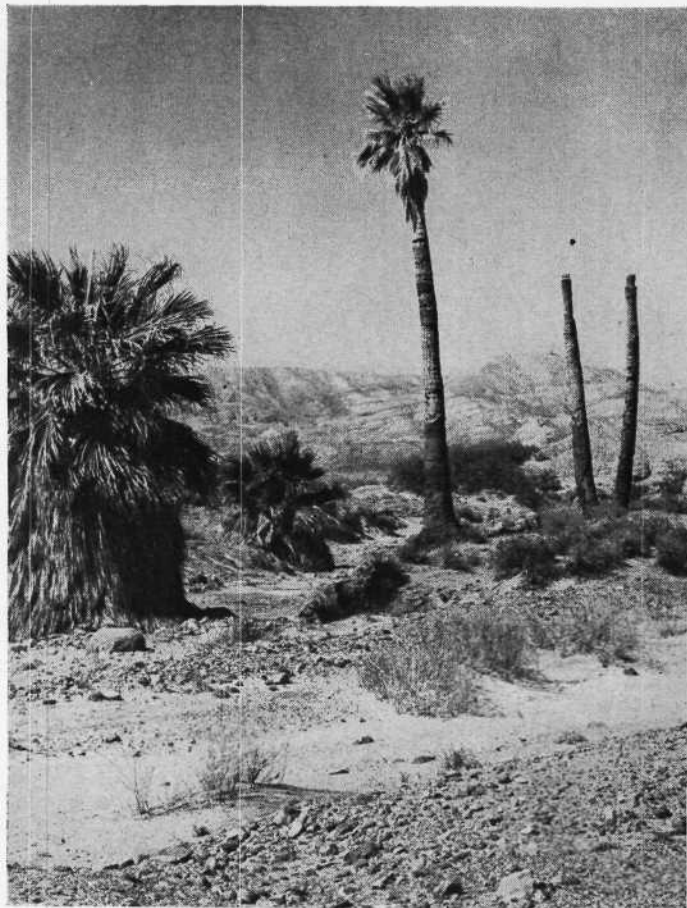
His camp generally was at a little spring of brackish water seeping from a clay bank at the base of a tiny cluster of native palms. Only three of the palms remain alive today, but weathering trunks on the ground are evidence of a more flourishing oasis here at an earlier date.

The old "Doc" Beatty road from Truckhaven on Highway 99 to Borrego valley followed the sandy floor of Palm wash for a distance. In such a water course no road is permanent, but the point where Beatty's old buckboard and the freight wagons climbed out of the arroyo and took off across the clay ridges still may be seen. The road was built 18 years ago, and today there are deep water-worn ruts in the grade, and it no longer is passable.

To explore Palm wash today, one leaves Highway 99 at Bridge No. 58-46, the third bridge north of Truckhaven service station, and follows the winding course of the dry channel. It is sandy in places, but a bold driver may go for miles up the arroyo without difficulty. The important thing is to keep the car rolling with plenty of momentum. The trouble which inexperienced drivers encounter in such terrain is due to their timidity. They are too cautious. For the desert visitor who likes to poke around in the trackless areas, whether in quest of mineral treasure or fossil deposits or just for the fun of exploration, I would offer this suggestion: On the upwash trip keep the car rolling, and when it looks too tough to roll any farther turn around and head

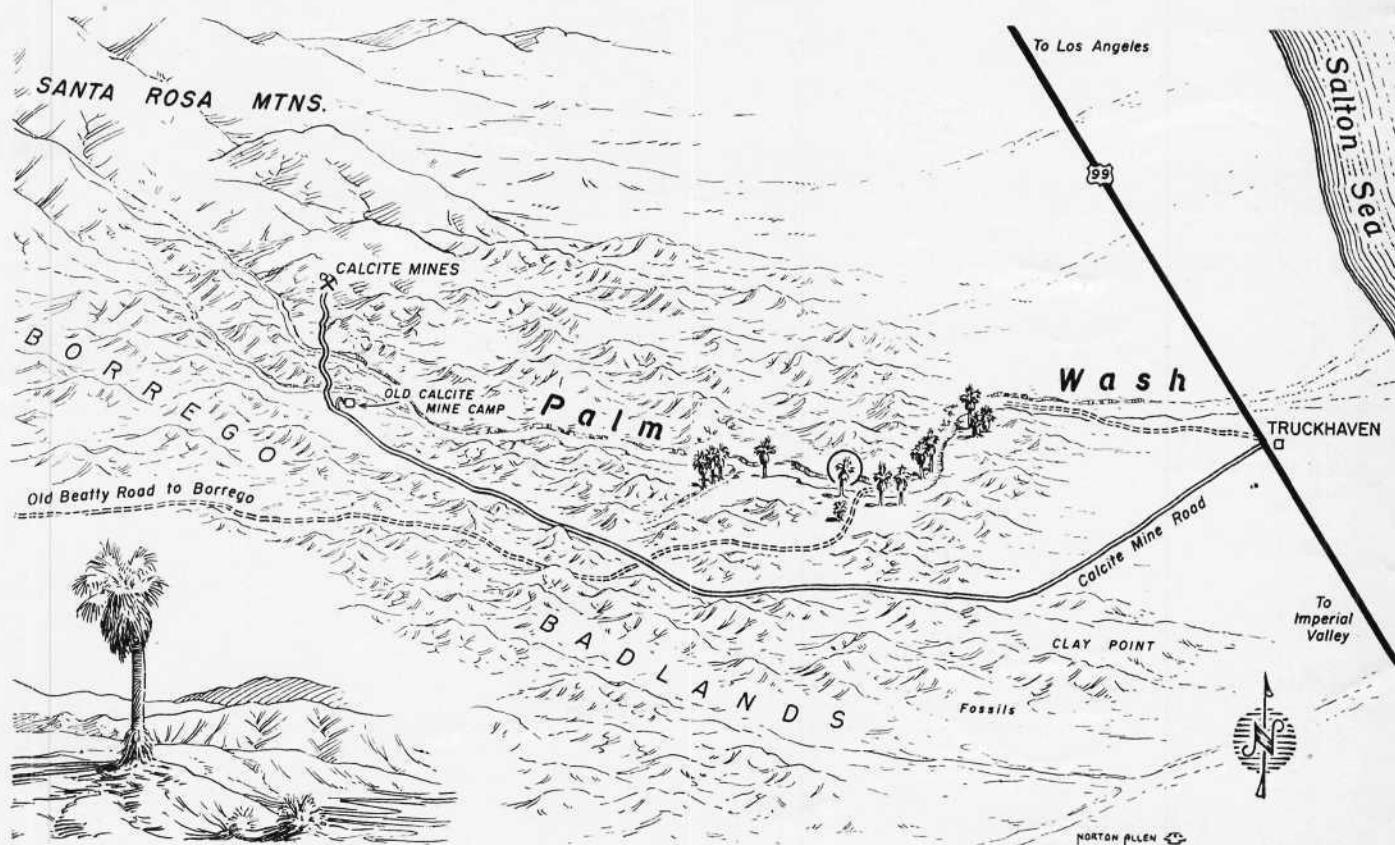


The "venerable grandmother" of Palm wash oasis. This tree, perhaps 150 years old, was pictured on the cover of Desert Magazine in December, 1937.



Due to the lack of water Palm wash oasis gradually is losing its fight for survival. Here are five of the remaining 13 native Washingtonias.

The surviving 13 palms in Palm wash are scattered in and near the arroyo over a distance of two miles. The palm in the circle is the one to which the author pays tribute in this story.



downstream before losing momentum. Plan the stops for sight-seeing on the return trip down the wash. Learning that lesson cost me a lot of shovel-blisters.

My first trip up Palm wash was in 1936. At that time I found two springs, and counted 22 mature Washingtonias and five young trees.

But so far as water and native palms are concerned, Palm wash is a vanishing oasis. Today it is necessary to dig for water—and the palm count is 10 adult trees and three youngsters. The water supply in this area slowly is diminishing—for reasons which probably are related to the fault lines visible in this region. Only three of the palms grow in the floor of the wadi. The others may be seen on the clay and gravel hills on the south side. The first of these palms—a group of one adult and two young trees—is found three miles up the wash from Truckhaven. The others extend along the arroyo within a distance of two miles.

Henry Wilson's old camp is at the upper group, on the bank of a small tributary wash. From this base Henry made countless trips over the surrounding hills in quest of Pegleg's black nuggets. I have camped with Wilson at that spot, and have done some rockhound prospecting on my own. The nearest I ever came to locating any black material of value was the discovery of some old monuments erected as far back as 1915, by oil prospectors. There has been drilling for oil in the Borrego badlands, but it yielded no better returns than Henry Wilson's quest for the mythical black gold.

But while Palm wash has produced neither gold nor oil, it has supplied large quantities of one of the most important strategic minerals required by Uncle Sam in World War II. The hidden treasure in this area was discovered to be calcite—crystals which play an essential role in some of the most effective gunsights developed by army ordnance. An ample supply of these crystals for present and future war needs has been mined, and the claims no longer are in active production—hence the story now can be released.

Recently I revisited this area at the invitation of Jack Frost, one of the owners of the calcite mines. At the mining camp near the head of the wash, 10 miles from Truckhaven, I met Jack and Alice, his wife, and their partner, Robert R. Dye. Most of the mining buildings and equipment have been removed, and we camped that night on the sheltered side of a sandstone hill near the workings.

They told me the history of the calcite claims. Following crystalline float which is widely distributed over this area, a veteran prospector named Heather located the first claims many years ago. He recorded his first location notices in Imperial county, thinking his claims were in that jurisdiction. Later he learned they were on the San Diego side of the county line, and corrected the recordings. Later, from adjoining claims John Hilton and Guy Hazen brought out specimens which attracted considerable attention. John sent some of the samples to an eastern laboratory, but the report at that time was that they had no commercial value.

Following Pearl Harbor when laboratories were concentrating on the problem of improved weapons, it was found that certain types of calcite crystals furnished the perfect answer to the development of a highly effective gunsight—and the samples Hilton had sent in previously were just right. Following a long distance call to Hilton, one of the laboratory experts came from the eastern seaboard to accompany John to the claims. Out of this inspection came orders for Hilton to start mining calcite crystals with all possible speed.

Later, to protect its supply of material, an eastern manufacturing concern bought and consolidated most of the claims in the area—about 25 in all—including those owned by Hilton. John remained as one of the mining operators despite a painful injury, until the claims eventually were resold to Frost and Dye who continued mining until the war needs were filled.

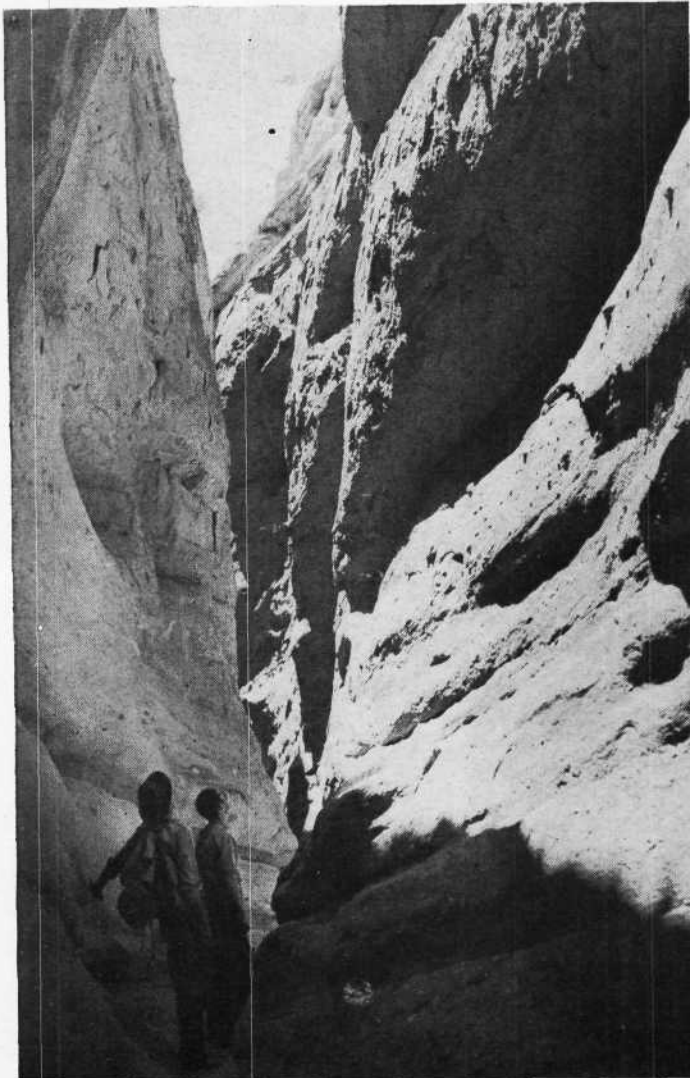
The deposits occur in seams, in some instances two or three feet in thickness. They are located close to the surface and most of the optical calcite was taken out from vertical open cuts in the sandstone hills.

Some distance from the commercial calcite deposits, the partners Jack and Bob, opened a seam of beautiful basic plate crystals. Many fine specimens, including some of museum quality, have been taken out of the deposit. While these have no value for optical purposes, they are much in demand by collectors, and the owners are taking out what they can this summer for that purpose. Owing to the rough terrain surrounding this deposit, a long back-pack trip is necessary to bring out the crystals—and back-packing delicate calcite plates on slopes too steep and rocky for a burro is a tedious job. The boys will earn all they get for those specimens.

On the return trip from the mines, I took a camp road that wound down to the floor of a Palm wash tributary, and followed the arroyo down past the palm trees to the bridge on Highway 99. This made an interesting loop trip, with a downhill grade on the sandy floor of the wash.



Alice Frost likes to "gopher" into the calcite seams for museum specimens such as the one she is holding.



One easily could become lost in the labyrinth of canyons and crevasses in the sandstone hills of Borrego Badlands.

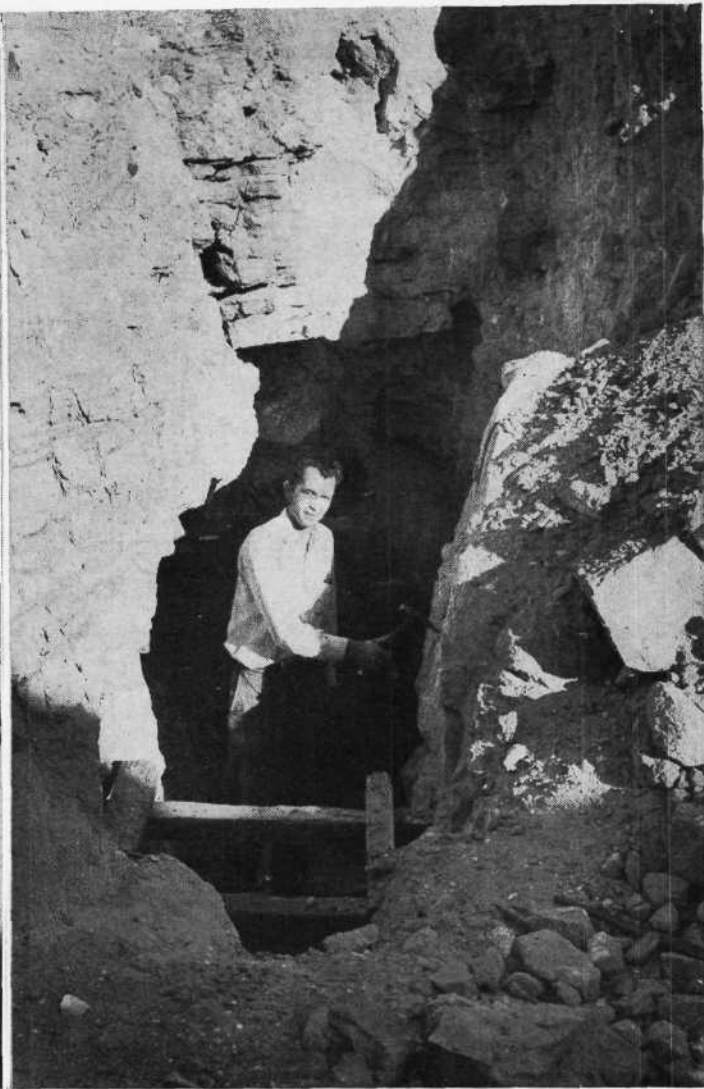
Palm wash, and in fact the whole Borrego badland area, is a happy hunting ground for those seeking sandstone concretions for the rock garden. These concretions take many fantastic forms, including flagstone material for curbs and sidewalks. Near the base of one of the trees in Palm wash the ground is covered with perfectly round little pebbles—like the culls from a marble factory. At other places these same globular forms are as big as cannon balls.

Since these concretionary forms constantly are weathering out of the sedimentary deposits, the supply never will be exhausted.

There also is fossil material in this area, and occasionally one finds a piece of petrified wood—the dark brown wood characteristic of the Southern California desert.

Since part of the badlands is in the Anza desert state park tentative plans are being made for the construction of a paved road from Truckhaven through the heart of this highly-eroded area to Borrego valley. Such a road not only would provide more direct access to the scenic canyons in the northern Anza park, but would be a boon to Borrego valley vegetable and fruit farmers who are now seriously handicapped in getting their products to market.

I mentioned the spring at the upper palms, where Henry Wilson camps when he is searching for the Lost Pegleg. There is another spring in a little tributary wash near where the old Beatty road climbs out of the wadi. One of these two waterholes



Jack Frost in one of the open cuts from which the optical calcite was mined for gunsight manufacture.

is marked Four Palm spring in an old map—but I have never been sure which one.

At the lower spring there were palms at an earlier date, but they were cut down by unknown vandals, and the logs used to build a roof over the spring. This waterhole is now only a damp place in the sand, where thirsty coyotes occasionally paw their way down to water. An old prospector told me that moonshiners had a distillery here during the days of prohibition, and because of the isolation of this spot were able to operate for a long period before the law caught up with them.

Over a low hill from this spring is a grizzled veteran of the palm family—a tree so striking in the desolation of its surroundings that we used it as a cover picture for the second issue of Desert Magazine, in December 1937. This grand old tree has defied the elements for perhaps 150 years. The winds have whipped the sand away from its roots. It is bent from age and the weight of a vigorous thatch of green and dry palm fronds at its crown. This tree, more than any object I have seen on the desert elsewhere, symbolizes the courage, the tenacity, the dignity, the vitality of the desert country. Once I referred to it as the "Grand Old Man" of the desert. And later I discovered I was wrong. One October day I drove up there and found a fine cluster of fruit hanging from its crown. Male palms do not bear fruit. And so I apologize, and doff my hat in respect to the venerable grandmother of the Palm wash tribe of Washingtonias.

The pearl in the beautiful necklace, the plaster on the wall, the onyx marble inkstand, the stalactites in the cave, the chalk in the schoolroom — all these and a thousand other items in daily use contain calcium in one form or another. And yet as a metal, few people ever have seen it. Here is a glimpse of one of the most useful members of the great mineral family.

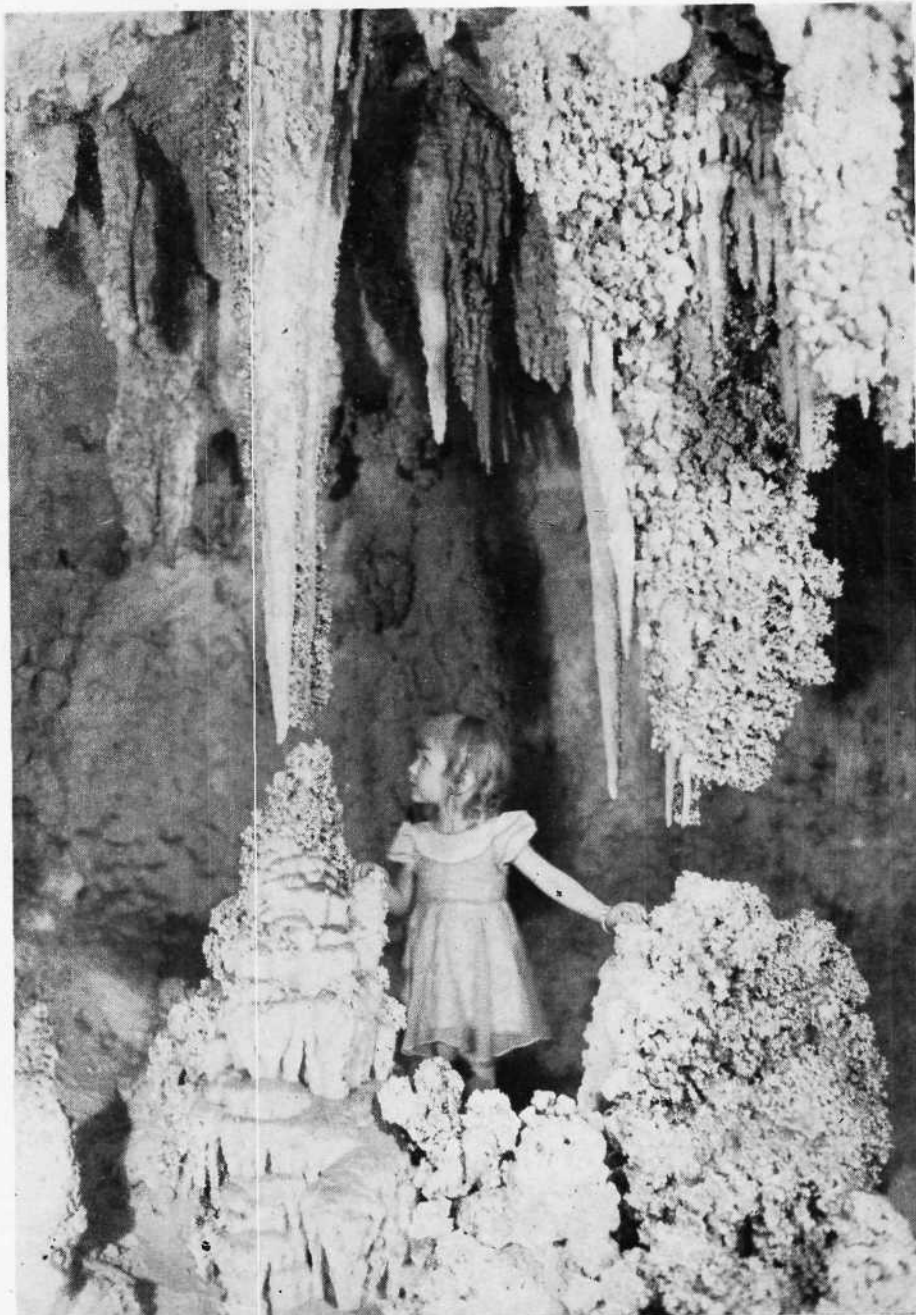
Calcium-- Mineral of Many Guises

By JOHN D. THOMPSON

CALCIUM IS described as a soft silver-white metal, occurring only in combination. While it is one of the most abundant of metals, the earth being composed of about five per cent calcium, it is a metal that comparatively few people ever have seen, or know where it is to be found.

Its hiding places are not well concealed, but on the contrary no other mineral is so well advertised, if unusual beauty of structure and bright colors can be taken as a bid for recognition. In many instances the hiding places are original and unique, either in crystals or massive rock, in gorgeous cavern displays, in vast limestones, beds of shells and coral reefs, and in solution in nearly all natural waters. It is an element that each of us, together with all animal life and the birds of the air use constantly throughout life.

One of the great storage places for calcium is the White Cliffs of Dover, recently glorified in song, one of the most prominent landmarks in the world. These cliffs are composed of pure fine-grained



Lacy and glittering festoons of calcium carbonate hang suspended in Carlsbad caverns, New Mexico. National Park Service photo.

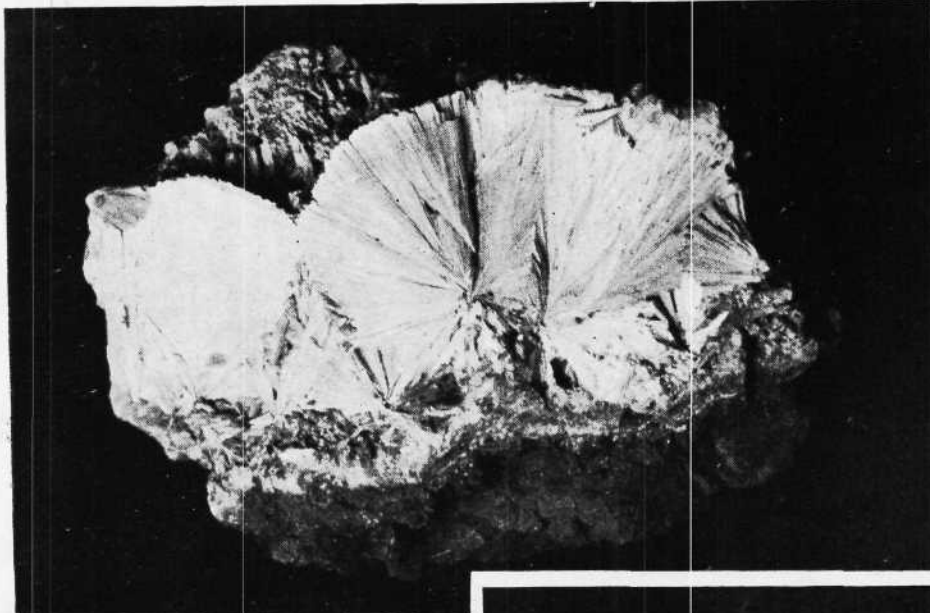
friable limestone, or chalk, in which occurs in chemical disguise the element calcium. Originally the limestone was formed on the ocean bottom by the accumulation of tiny calcareous shells of the little animal with a big name, foraminifera. The salt water, where the cliffs now stand, carried calcium in solution, which was withdrawn by the tiny single celled animals to make their shells. These little animals lived either as creeping life on the bottom or floating life near the surface. When they died their shells accumulated on the sea bottom to form immense beds of limestone, finally to become consolidated and uplifted to their present height.

There are 280 mineral species in which

calcium is the prominent basic element as compared with 148 of magnesium, two of platinum and six of gold. Calcite, or calcareous spar, is the stable form of calcium and the principal mineral of the numerous calcium group, being also the most abundant of all minerals except quartz.

No other mineral is of more interest for the reason that it occurs in such a variety of colors and forms. It imitates, builds independently on a vast scale as exemplified by coral reefs some of which are over 1200 miles long, uses its own coral animals in construction, and borrows and uses bright colors to adorn itself more lavishly than any Hollywood beauty or gypsy belle.

Just why calcite should present itself in



Pectolite. Needle-like crystals radiate from the center in all directions.

such an array of colors and shapes is difficult to explain, but where colors appear they are applied with taste and elegance. While many of the crystals are shapely enough to be used as gems, generally they are too soft for use as jewels. The most important calcium minerals are calcite, limestone, marble, aragonite, gypsum and fluorite, while such names as yttracite, tyuyamunite, syngenite, ettrinite, tachydrate and nordenskiöldine are plentiful even though hard to pronounce.

One of the calcium minerals, calcite, has more than 300 varieties of form. The more important ones like gypsum, apatite, fluorite and aragonite are readily identified. Others like scapolite, pectolite, garnet and vesuvianite while perhaps not so generally

known are seen in most mineral collections. Some are remembered by their unusually

lengthy formula as this one: $2\text{CaF}_3 \cdot 2\text{Al}(\text{F}, \text{OH})_3 \cdot \text{CaSO}_4 \cdot 2\text{H}_2\text{O}$, or perhaps by the unusual name of the place where it is found, as for instance the common rock, creedite, found near Wagon Wheel Gap, Creed Quadrangle, Colorado. With most of the other 280 rocks the acid test for calcium ends the amateur's day of descriptive mineralogy.

Probably the most plentiful of all calcium crystals are the hexagonal-tripyramidal apatite gems which are used as gem stones. The small crystals presenting 18 facets of softly shining colors of sea-green,

Satin spar. Fine fibrous variety of calcium with a pronounced silky luster.

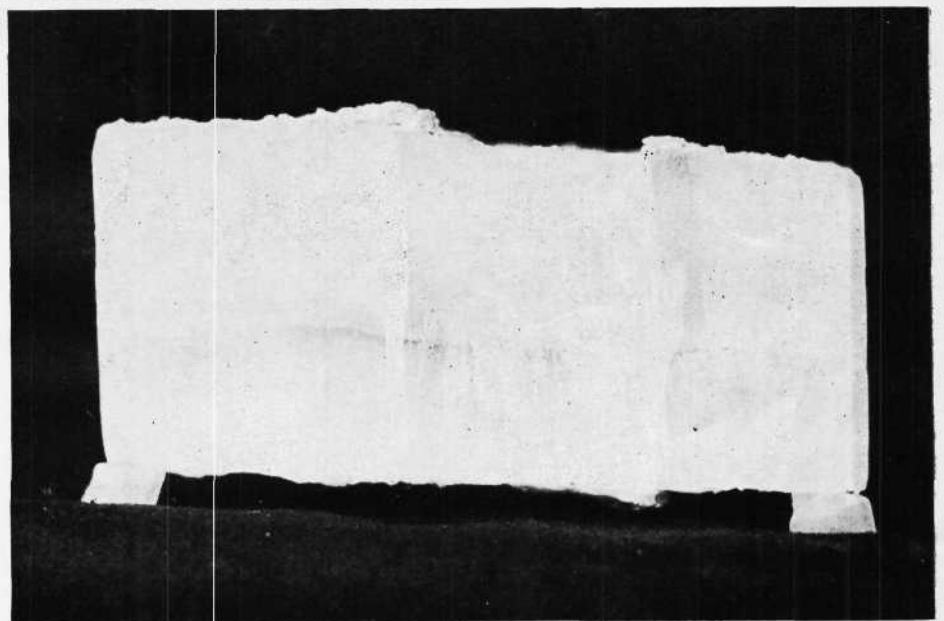
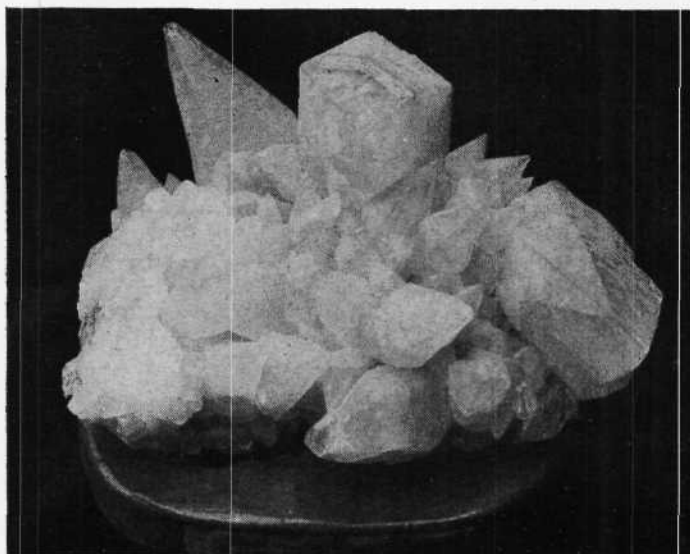
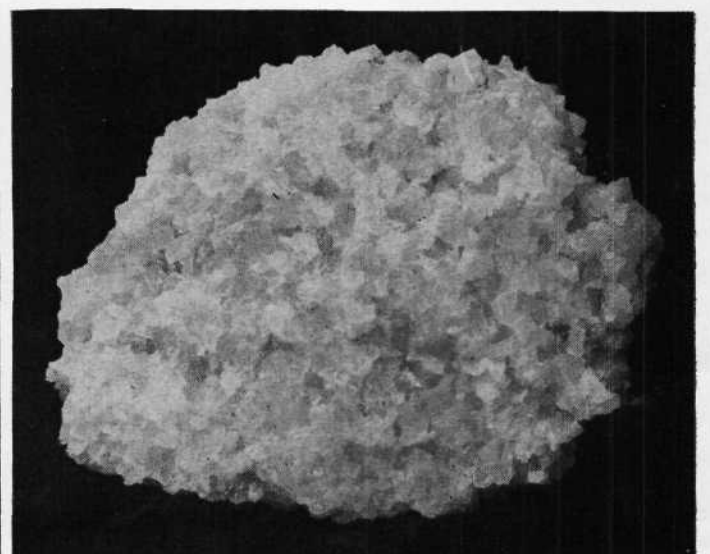


Plate of wine-yellow dog-tooth spar calcite crystals.



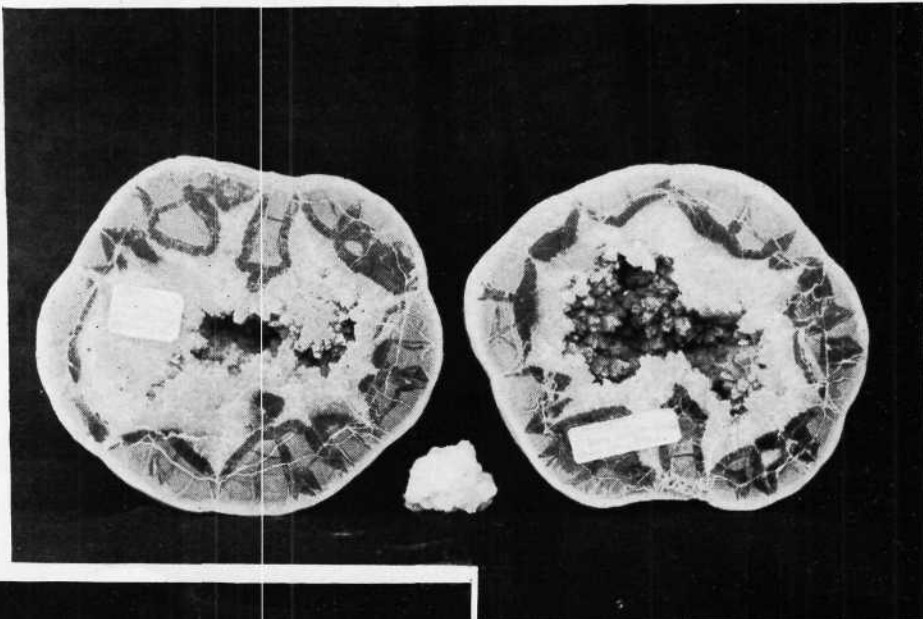
Fragment of pure calcium carbonate rhombohedral crystals.



ful of all hiding places for the rhombohedral unit cell of calcium atoms, and in many cases are quite perfectly cut and polished and ready for use as a ring setting. However, the mineral is not hard enough to withstand the abuse to which the usual stone is subject, being no harder than the point of a blade in a good jack knife. It is interesting to know just why minerals are given odd sounding names. This one, apatite, is from the Greek words, "to deceive," due to a resemblance to fluorite, amethyst, aquamarine, etc.

Fine pearls, lustrous rounded pale blue concretions of great value, often the tomb

Vaterite. A variety of crystalline calcium carbonate.



Septeria. A concretionary nodule of lime, the inside lined with dog-tooth spar.

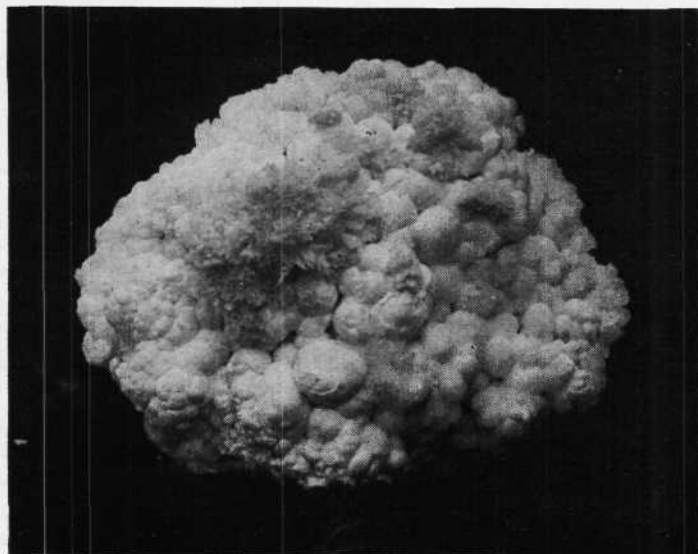
The vast coral reefs that encircle the globe, especially in the warm shallow waters near the equator where coral animal life is so active, are limey growths of calcareous skeletons of marine animals being composed essentially of calcium carbonate. These immense reefs with their sharp pinnacles so dangerous to ships, are continuous growths of coral and layer upon layer of broken calcareous skeleton fragments cemented into a solid mass with lime provided by the numerous lime secreting algae, seaweed, or precipitated by minute coral animals. Finally these masses of coral and lime, covered with endless acres of delicate plant-like growths of coral, become consolidated as limestone—a coral reef, one of the wonders of calcium.

of a tiny dead parasite, is made of that exquisite mineral, aragonite, which is calcium carbonate. Shells taken from the sea, if properly prepared from living animals,

not to be confused with beach-worn and sanded shells, are as beautifully tinted in bright colors of aragonite as are beautifully tinted cut gems on display.

Nail-head spar. Oval plate of yellow calcium carbonate.

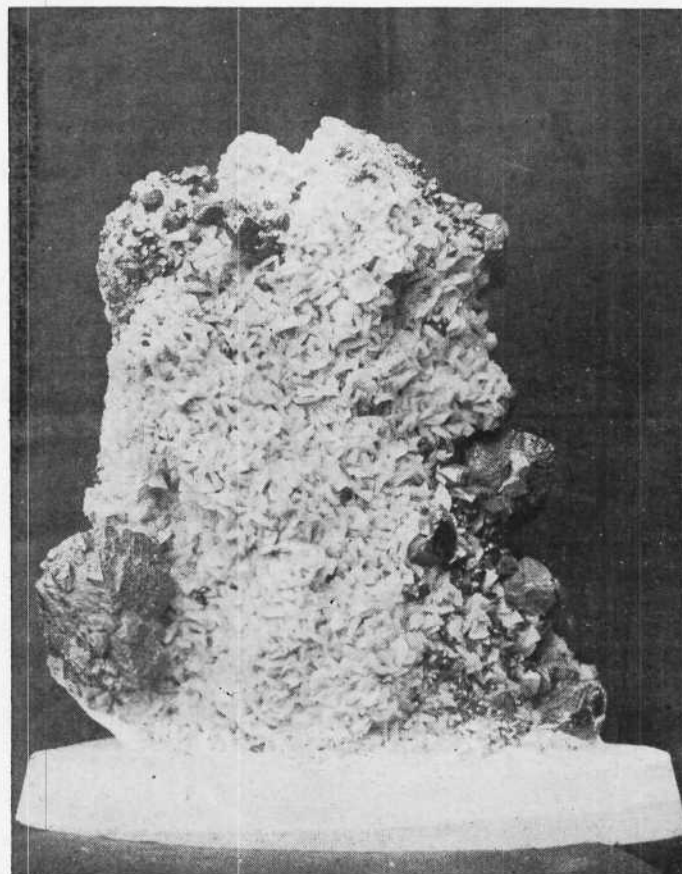
Specimen of Aragonite crystals from Bisbee, Arizona.





Nail-head spar crystals of wine-colored calcite embedded in ruby sphalerite with tiny crystals of yellow pyrites.

Saddle-shaped dolomite white crystals encrusted in ruby sphalerite crystals. A fine combination of white and ruby red.



DESERT QUIZ

Answers are on page 36.

- 1—Stalactites and stalagmites most commonly found in natural caves are of— Limestone..... Quartz..... Feldspar..... Lava.....
- 2—Before the white man brought soap to the Southwest, the Indians, for cleansing used— Minerals..... Yucca roots..... Agave leaves..... Nothing.....
- 3—A Hopi woman, according to native custom, obtains a divorce by— Running away from her husband..... Making a sacrifice to the gods..... Edict of the medicine man..... Putting her husband's belongings outside on the doorstep.....
- 4—The Horned Lizard, or toad, lives mainly on— Mice and desert rodents..... Bugs and insects..... Vegetation..... Other lizards.....
- 5—Pauline Weaver's role in the history of the Southwest was that of— Archeologist..... Stage coach driver..... Guide and trapper..... Steamboat captain on the Colorado.....
- 6—The famous ruins at Casa Grande, Arizona, are believed to have been built by— Apache Indians..... The Hohokam..... Aztecs..... Cocopahs.....
- 7—Going by the most direct road from Tucson, Arizona, to Guaymas, Sonora, you would pass customs inspectors at — Douglas..... El Paso..... Nogales.....
- 8—Largest inland body of water in the states of California, Utah, Arizona and Nevada is— Great Salt Lake..... Salton Sea..... Lake Mead..... Reservoir at Roosevelt dam.....
- 9—Tallest cactus growing in the desert is— Cholla..... Bisnaga..... Prickly pear..... Saguaro.....
- 10—Obsidian is— Sedimentary rock..... Conglomerate..... Igneous..... Metamorphic.....
- 11—If you were planning a trip into the Sangre de Cristo mountains you would go to— Nevada..... New Mexico..... California..... Utah.....
- 12—Malachite most likely would be found in a— Tin mine..... Copper mine..... Iron deposit..... Gold mine.....
- 13—Reg Manning of Phoenix, Arizona, is best known as— Cartoonist..... Mining engineer..... Politician..... Bronc Rider.....
- 14—Mission San Xavier del Bac at Tucson was established originally by— Father Font..... Father Kino..... Father Escalante..... Father Serra.....
- 15—The settlement of Shoshone in the Death Valley region derived its name from— An early day trapper..... A species of desert tree..... A mineral found in that locality..... A tribe of Indians.....
- 16—Indians who dance with snakes as part of their prayer for rain ritual are the— Hopi..... Hualpai..... Pahute..... Havasupai.....
- 17—Guide for the first known party of white men to see the Rainbow Natural bridge in Utah was— Kit Carson..... John Wetherill..... Bill Williams..... John Wesley Powell.....
- 18—Morro Rock in New Mexico is famous mainly for— Its historical inscriptions..... Its Indian taboo..... Odd shape..... Historic battle.....
- 19—Locale of the legendary Lost Arches mine is the— Superstition mountains of Arizona..... Wasatch mountains in Utah..... Panamint mountains bordering Death Valley..... Turtle Mts., California.....
- 20—If you wanted to go from Las Vegas, Nevada, to Lehman caves, general direction of your route would be— East..... North..... South..... West.....

LETTERS...

From the Chinese War Theater . . .

Somewhere in China

Dear Sir:

Word has reached me in this remote section of the globe that the March 1945 issue of *Desert* contains a photograph of a Nevada ghost town taken by myself in the good old days when the enjoyment of the romance of the desert was a matter of gassing up the old buggy and heading out.

If my information isn't just another rumor, please send me a copy of the March number so I can revel in the past for a few hours.

It is very heartening to know that *Desert Magazine* carries on and permits those lovers of Nature to derive enjoyment and relaxation both from the memory of past adventures, and in the making of plans for future excursions into the colorful desert.

Regardless of the adventures in foreign lands that go with army life, the lure of the Southwestern desert remains in my blood. There is no comparison between the rugged desert wilderness in my homeland and the landscape here—a landscape that has been worn smooth by centuries of Chinese civilization.

I will be hounding the mail call in the hopes of receiving the March issue with the ghost town picture, and am hoping to supply you with more pictures in the future.

SGT. ERNEST C. PETERSON

Greetings, Sgt. Peterson: The March issue with your ghost town photo (poetry page) is on its way to China. The staff of Desert also will be glad when more of your fine photos are available for our pages.

—R.H.

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Has Anyone Seen Horsethief? . . .

Randsburg, California

Editor *Desert Magazine*:

To inform friend G. F. Engle (June DM, page 28) as to the whereabouts, further escapades, etc., of "Horsethief Bill" Kilmartin, I will let this much out: Bill is hiding in the wilds of San Francisco, thinking, perhaps that the statutes of limitations has NOT run, and that the sheriff of Modoc is still lookin' for him.

But Bill acquired a different name during his few months visit at my camp near Randsburg which he christened "Rancho de Mingus." Due to the fact that he was an artist in preparing rattlesnake sandwiches, he was called "Rattlesnake Bill." He had a rival, though, in the person of Shel Wettach, old sourdough of the days of Nome, also a visitor at the ranch. Shel would garnish his sandwiches, when

served, with the rattles of the reptiles he and Bill would save, and he always liked to decorate his dishes appropriately, but Bill didn't like the idea and wouldn't have anything to do with them.

This camp is situated in an oval basin, a drop along the Garlock Fault (major east-west fault), about a mile long by half a mile wide. Bill thought once of building a stone wall clear around the basin and starting a rattlesnake ranch, and did actually build a few hundred feet of walls, in and about the cactus garden. Bill would crawl out of bed at six in the morning and get in an hour's work on his walls before breakfast, which was always at seven. I was the breakfast cook, and one morning I overslept and Bill wasn't called in until eight. When he came in and looked at the time piece he said he thought that was the damdest longest hour he ever worked. After that, he took the alarm clock out with him and placed it on a rock near his work, just to be sure.

S. M. MINGUS

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Sure, and why not . . .

Oakland, California

Dear Sir:

As ex-El Centrans and numbering among those who proudly claim to have answered 14 of the 20 questions correctly (from your June, 1945 issue), we boast the honorary title of "Desert Mice." Can we get away with this?

MARY and FRANK ROESCH

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Fish, Antelope or Mermaids? . . .

Aguauna, California

Dear Randall:

On the book review page of your July issue I note a very interesting explanation of the "Fish Traps," written by Adan E. Treganza.

Now I am all up in the air, as I thought I had solved the fish trap question. I have found many of recent use all along the Lower California gulf coast. They are always near an Indian campsite, and are still serviceable as traps for mullett. However, I am always ready to concede to higher learning.

Mr. Treganza disregards the fish trap theory, and suggests they may have served as blinds for antelope hunters. If that is true, then the paleontologists should be looking for the bones of that marine antelope. They must necessarily be a marine species for the "wall" of the trap is always toward the sea.

Perhaps Mr. Treganza has something after all. Maybe those ancients were trying to trap mermaids—but in that case they would be trappers rather than hunters.

HARRY H. BERGMAN

It's too Hot to Argue . . .

San Bernardino, California

Dear Editors:

Strange as it may seem, *Desert* has of late met with my full approval. Nothing has appeared that I can criticise. Life is indeed becoming tame. Cannot you work up some controversial subject?

CHARLES BATTYE

To Old-Timer Battye: We don't want Desert to become too tame—but Ol' Man Sun is pouring it on us these days. It isn't good arguin' weather. Just sit tight for a couple of months—and when the fall days come we'll try to launch a buzz bomb over in your direction.

—R. H.

. . .

Suggestions from Nebraska . . .

Omaha, Nebraska

My dear Mr. Henderson:

I was not sure I wanted the *Desert Magazine* another year. It is a good magazine and very interesting, but when a subject is discussed I sometimes think both sides of the question are not viewed.

Take the Jackson Hole deal. I love the great outdoors, but I don't like to see things railroaded as this was. I have been in the Jackson Hole country, and the Tetons should be kept for future generations, but as to the part now grabbed by Washington I cannot see where it has the qualifications for a National monument.

This will rob Teton county and Wyoming state of revenue from taxes, and if you will look at the map you will find that Wyoming is well covered with government reserves.

Your "rockhound" department could be improved by more articles on how to do things. We, the rest of the United States, are not interested in the Los Angeles shows or their doings, and some of us like black jade instead of faking nature by coloring agates, as one of your editors does.

Get the true facts and present both sides, remembering we all do not live in the Southwest, and I am sure your magazine will go places. This is intended as constructive criticism, and my subscription is enclosed.

DAN H. DUNHAM

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Dreaming of Postwar Days . . .

Philippine Islands

Dear Editors:

Life is a rather drab affair at best way out here so far from home and friends. One of its brighter moments each month is the arrival of *Desert*. Because for a few hours I am home again traveling some of the trails I once knew, and planning jaunts on new ones. Thanks so much for making those hours possible.

JOSEPH G. HUFFMAN, RT1/c

It is like an explosion of visible music, says Jerry Laudermilk, when the pent-up energy deep in the heart of the yucca suddenly is released in a stalk that grows as much as a foot a day and then blossoms into a gorgeous bouquet of creamy brilliance. No human knows just how this miracle is wrought—but here is as much of the story as a scientist can piece together.

When Yucca Flowers

By JERRY LAUDERMILK

Drawings by the author

Upper right—Semi-diagrammatic figure of cells of yucca embryo to show cell growth through division. A mature cell ready to divide: N nucleus, Ne nucleolus, Ch chromatin strands. B chromosomes resulting from break-up of chromatin strands arrange themselves horizontally at the center of the cell. C chromosomes redistributed at opposite poles of the cell will form the nuclei of two new cells. D first suggestion of a new cell wall. E wall nearly established. F wall complete and two daughter cells formed. G and H the daughter cells now "grown up" are ready to divide and repeat the whole story.

Upper left—Magnified section through a seed of *Yucca whipplei* to show the embryo. A the root end, B the plumule or shoot end.

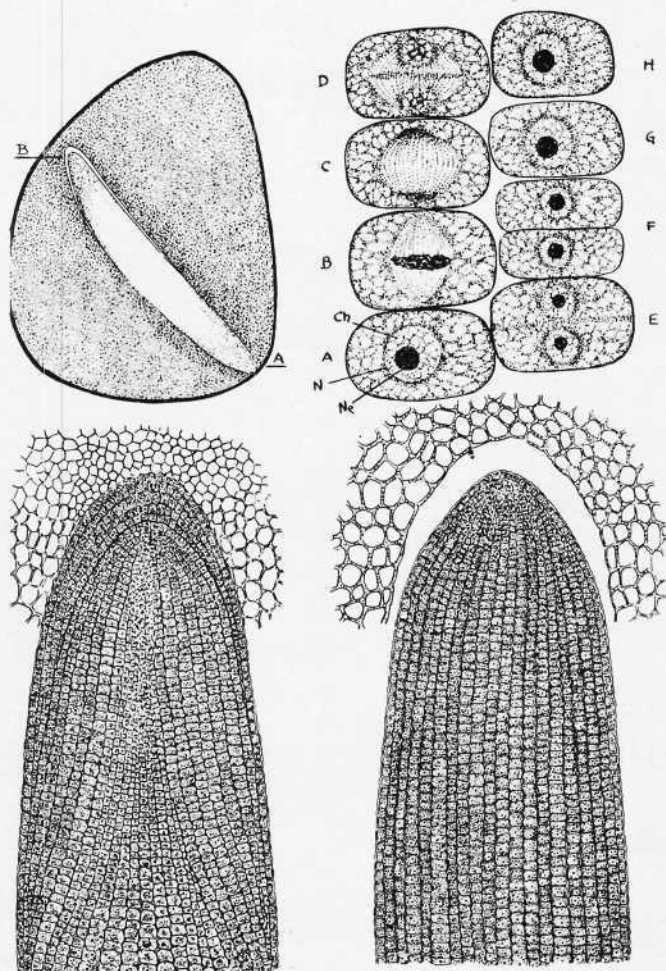
Lower left—A greatly magnified section through embryo at very beginning of germination. Cells of the root cap cover the tip like a thimble.

Lower right—Greatly magnified section through plumule end of same embryo.

THE RANCH house of the LX Bar was built of yellow 'dobe. It stood near the middle of a small alluvial fan facing the Bradshaw mountains in Arizona. During my first months in the desert I used to outstrip the sun at rising and hurry to the top of a high ridge that had belonged to the jumping chollas since the Old People left the Hassayampa. There, beside a companionable saguaro shaped like something from Brobdingnag, I awaited one magical moment when the sunlight, split into beams of gold by the mountain peaks, lit up the valley.

It was straight, undiluted revelation. For half a minute it would seem as if a curtain had been drawn aside to give a glimpse of a mystical Arizona that had always existed in a timeless world. Against a vivid background of mesquite, catsclaw and cottonwood, the house, the windmill, horses, and everything around the ranch that caught the slanting rays, stood out keen

Terminal ten inches of flower stalk of *Y. whipplei*. Right—Imbricated bracts with tips of young flowers just showing. Right lower—Young flowering branch removed. Right upper—Spine-guarded tip of bract. Left upper—Bract pulled down to show young flower. Left lower—Attachment of bracts to stalk.



and bright but in miniature like models in a diorama lit by amber light.

Close-up and with whiter daylight, there was no longer a golden aura around ordinary things but the trim, keen look persisted. This was the impress of my aunt, who, a trim and precise person herself, imposed a will for order upon everything and everybody on the ranch from Fiddlesticks the cat and her two kittens down to common mortals like my cousin and myself.

But with all this regulation a kind of calculated liberty was allowed in appropriate places. Although the beans in the vegetable garden had to submit to a life of discipline, standing in straight lines like soldiers, the strictly ornamental flowers faced the world from a more informal angle. Take the hollyhocks for instance. These plants grew with just enough abandon to look as if growth were a downright satisfaction. This careful dodging of rigid symmetry included the placing of even the larger shrubs. There was no front yard exactly, simply a sandy expanse of smooth ground between the flower beds. Included in this orderly disorder were two yucca plants remarkable for their great dome-shaped clusters of radiating bright green leaves, pointed like stilettos.

These plants grew differently from the local Arizona yuccas, the "soaptree" or *Yucca elata* which had narrow leaves in thick bunches at the ends of long stems. According to my aunt, her two sword-bearing bravos were native Californians called Spanish dagger or to be scientific, *Yucca whipplei*. And, she added,

Section through terminal ten inches of flower stalk; location of actual growing tip shown at A. Right lower—Single well developed flowering branch enlarged. Left upper—Tip magnified, tissue of primordial meristem at B.

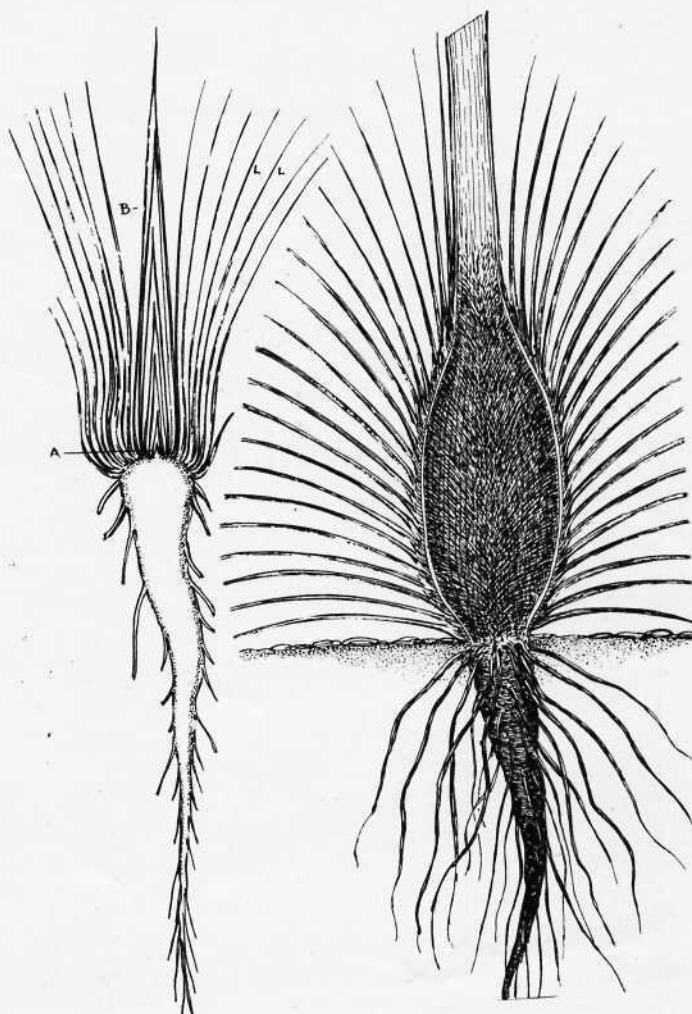
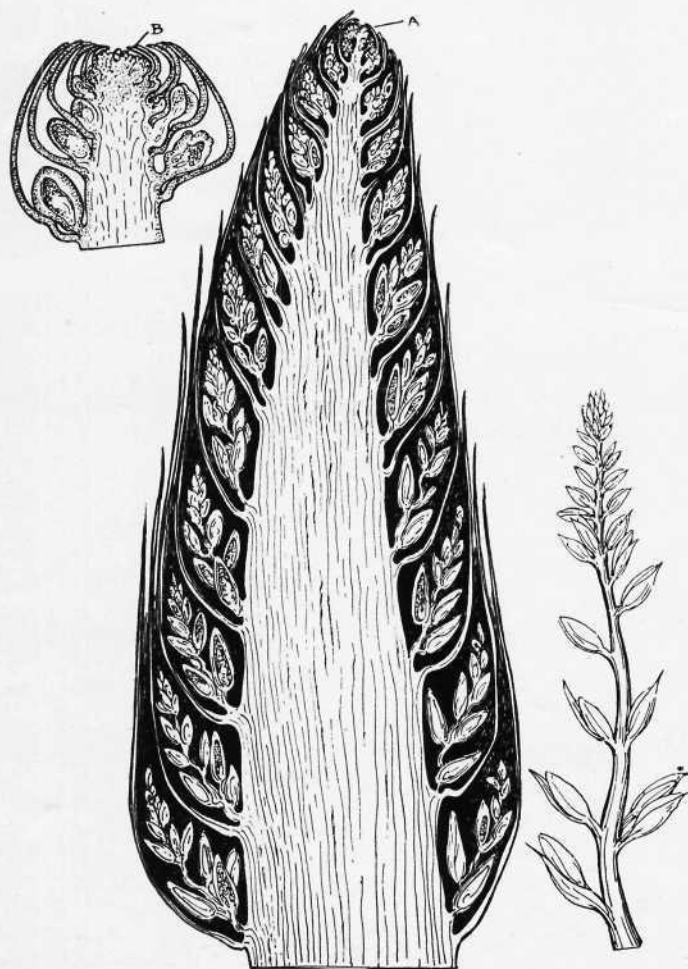
this species sometimes sent up flower stalks "15 feet tall." Since she had set out the young plants herself, I was curious to learn why she hadn't arranged places in their honor more toward the center of the general composition. Her answer was emphatic. "They are right where they belong." As ornaments of evening, they were to have the purple of the mountains and not the skeleton of the windmill for a background when they blossomed. She had thought of everything.

All this care about the landscaping of a couple of yuccas and her yarn about 15-foot flower stalks afforded me a kind of smug amusement. But it wasn't funny. I merely was ignorant about the ways of yuccas in the desert.

I had seen some species blossom in the Middle West and my ideas on the subject referred to rather spindling affairs about a yard high. In Oklahoma folks called yuccas "bear grass" and sometimes grew them in the graveyard. Sometimes they used the leaves in the smokehouse to hang up hams and sides of bacon. But the blossoming of these two pets, scheduled to take place right away, was declared to be a marvel worth a trip to Arizona in itself.

I can best compare my own impression on seeing a yucca in

Left—Longitudinal section through a young yucca plant with attached root. A—Actual growing tip at crown of root. B—Section through cone of rolled leaves at center of cluster. L-L single leaves. Right—Longitudinal section through base of flower stalk with attached root not sectioned. Cross-hatched oval area indicates arrangement of fiber in sap-gorged interior of axis. The sugar-loaded sap is quickly available food for rapidly developing flower stalk.



full bloom by saying that to me it is like an explosion of visible music. I know this sounds a bit crazy but flowers sometimes have influenced smarter men than myself in much the same way. For instance, an old Chinese sage once wrote an essay on the inaudible sound made by a plum blossom. I don't mean to imply that I think there is any actual noise, something you can pick up with an amplifier and set of headphones. The idea I want to convey is that if music, say that of a well played xylophone, could be congealed into solid form, it might very well look like a blossom-covered yucca stalk.

Writers a-plenty have described the splendor of the yucca in blossom. So I'll not add my own name to the list although the subject can no more grow old than Christmas. Once I told another story to

readers of *Desert* about the annual romance that takes place between the yucca flowers and certain dainty white moths named *Pronuba* who act as matchmakers necessary for pollination. This time my yarn deals with events from the scattering of the seed until just before the flower miracle occurs.

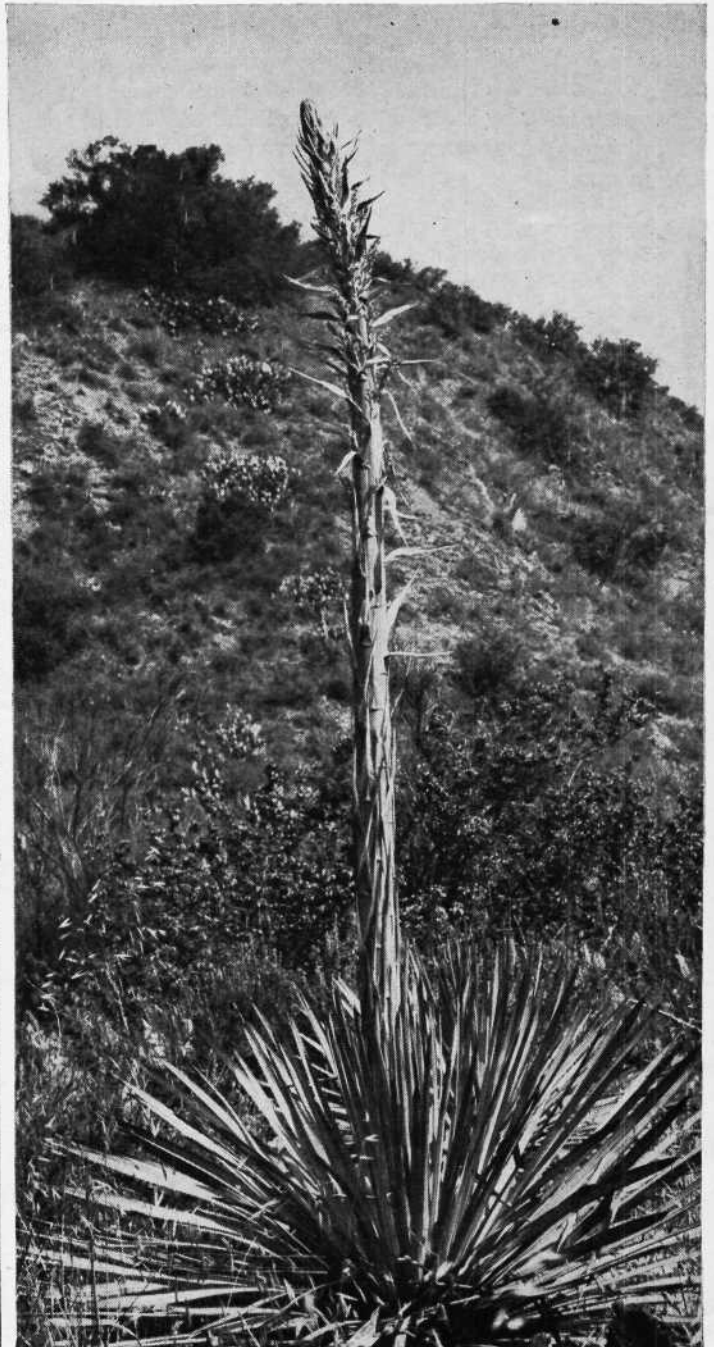
It's hard to make a choice from a galaxy of beauties, but since *Yucca whipplei* long has been one of my favorites, I'll write my story around that species. Let's have a glance at the background of my subject.

Yuccas are lilies. This fact you may have guessed if you ever looked carefully at a single blossom. The Liliaceae or lily family is extremely large and includes some of the most beautiful flowers in the world, and it has a brief history in a geological way. The most ancient lily so far known

is a fossil flower from the Upper Cretaceous of Japan, deposited there just a short 9,000,000 years ago.

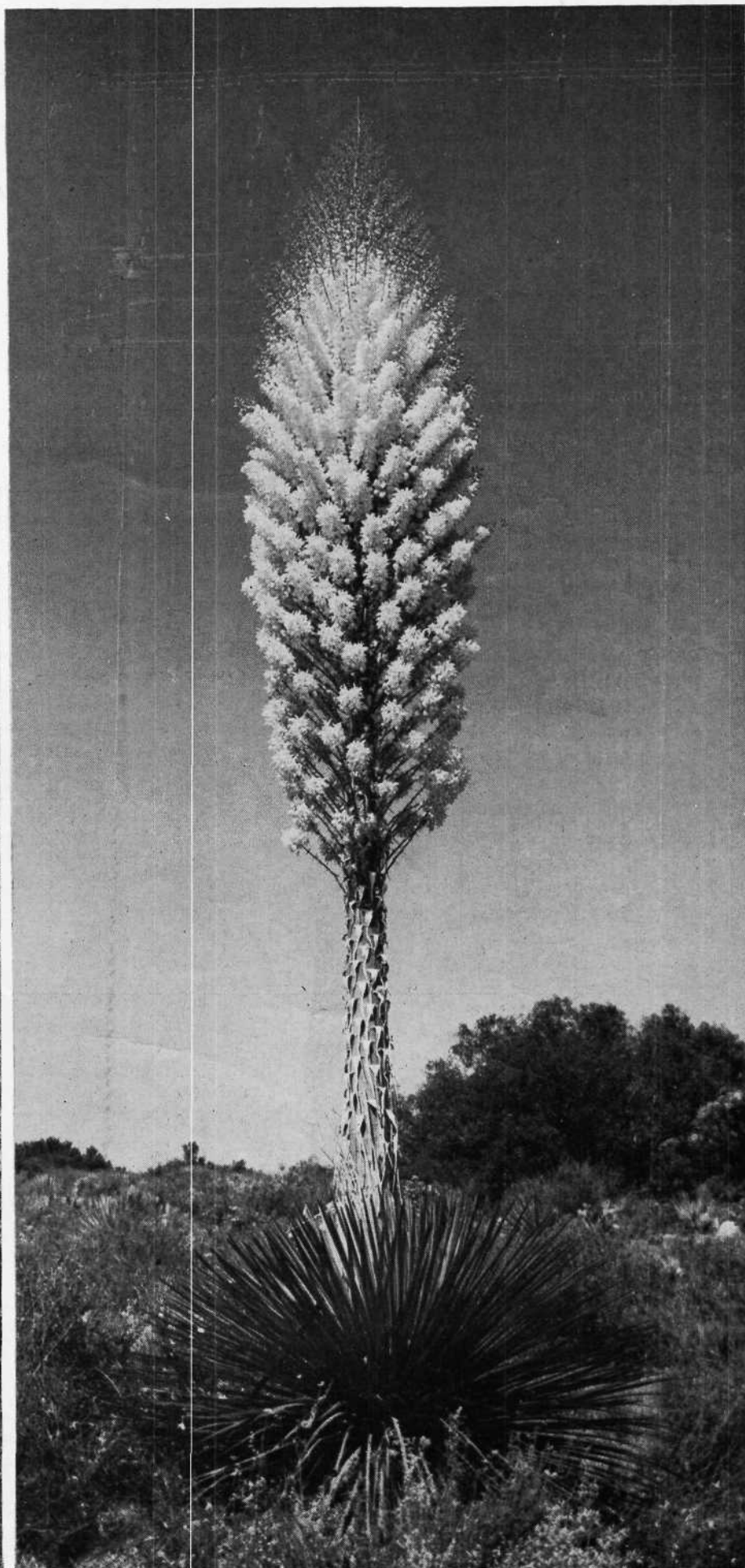
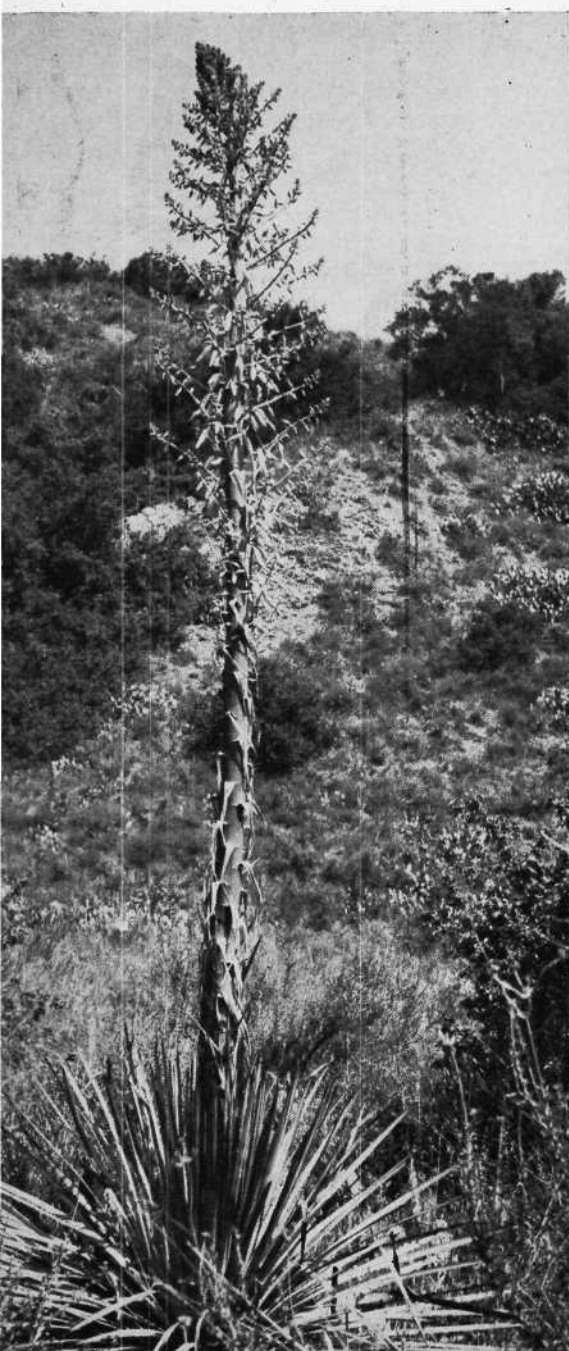
The seed of *whipplei* is a flat black object about the size and shape of an old-fashioned carpet tack head. It has an average weight of only 25 milligrams or almost exactly half the weight of a postage stamp. Under favorable conditions a plant can set 36,000 seeds. Probably half of these never have a chance to live since they are eaten by larva of the *Pronuba* moth. Of the lucky ones that escape, the probabilities for a successful career for any particular seed are slim.

It has been questioned whether a dormant seed should be considered as alive or dead. My own opinion is that a fertile seed is alive since it can be shown that a slow, faint respiration takes place through the



hilum or small natural pore of a seed. And seeds that are kept in airtight containers soon die, as do seeds that have lost most of their moisture. The old stories about grain having been sprouted from seeds found in Egyptian tombs are fables based on honest mistakes and sensational reports. I once found eight seeds of squash in the dust of a storage cave at Montezuma's Castle ruin near Camp Verde, Arizona, and coax

From left to right: 1—Young flower stalk showing just above leaf cluster. At this stage the stalk may grow a foot a day. 2—Flower stalk a week old. Tips of flowering branches just begin to show. 3—Stalk nearly full stage. 4—The miracle of yucca blossoms.



OUTLOOK BRIGHTER



The economic situation in motor transportation looks brighter.

It's not that we're going to get any new automobiles. It's just that there has been a sharp decline in the number of cars being retired.

Last year, 5,000 cars were consigned to the junk yard daily — many of them having reached the vehicle Valhalla through neglect.



One motorist reports that he is back on his feet again because of:

Frozen liabilities due to improper bearing lubrication.

Irregularity of radiator liquidation.

Infrequent tire inflation.

Indifference to stabilization of currency in the battery.

General dropping off of parts brought on by lack of attention.



However, many car owners are now taking better care of their rolling stock. Result is, there is a slump in the volume of autos hitting the scrap heap.

Prolonging your automobile's life is a simple financial transaction.

You invest a few ¢ and you save a lot of \$.

Your best bet is thorough and regular upkeep service. Shelllubrication is a gilt-edge buy.

This special system of maintenance pays big dividends. It was developed by Shell engineers to help make your car outlast the duration.

Shell Dealers and Shell Service Stations everywhere are at your service. For a brighter outlook in 1945, drive in and —

*Make a date for
Shelllubrication today!*

—BUD LANDIS

as I might with good soil, warmth and water there was no green response.

The first effects of warmth and moisture on a seed are mechanical and chemical. A section through a mature yucca seed shows the embryo as a simple, rod-shaped, ivory white kernel embedded in the bluish white bulk of the seed which is mainly food material stored up for use by the seedling. A section magnified under high power shows the embryo to be composed of thousands of cells of unusual type ready to divide as soon as growth begins. There is not the slightest thing about this yucca embryo that resembles the plant but the whole story of yucca life from seed through flower and back to seed is held in it.

There are several theories to account for this stability of a species. They are all too tremendously complicated to be done justice without a great many words. New advances are being made with such speed that only a specialist in the subject of heredity or science of genetics is qualified to speak on the topic and what he had to say would, in all probability be intelligible only to another geneticist.

One of the early workers in this field, Weismann, put forward the theory that offspring (in the case of plants, seeds with their embryos) contain a certain factor, possibly something of ultra-microscopic size, called the zygote which is unchanged from generation to generation and acts as a sort of foundation for the growth of cells which will mature into another individual like the parent. So far the nearest known parallel to Weismann's zygote is the so-called gene, a mysterious entity associated with the chromatin of the nucleus of the cell—I warned you that this subject was tough.

I said that cells divide or grow by division. By this I mean that when a cell reaches a certain limiting size a curious change begins. It actually builds a partition across itself to become two smaller cells which in turn grow up to reach the limiting size and repeat the operation.

When the yucca seed sprouts, the embryo elongates, growing from both ends. It soon breaks through the seed coat and bends into an arch. One end penetrates the soil to establish a root-hold while the other remains within the seed absorbing the stored food until the seedling is ready to begin life on its own. The first foliage leaf soon appears, green, ready to make its own food and from the first the young leaf is protected by a sharp spine at its tip.

The growth of the young plant is very slow. For several years it consists mainly of increasing the root system and adding more and more leaves to the rosette. Later, a more or less globular stem or axis hidden by the bases of the overlapping leaves begins to form. From now on for a few years there will be nothing new to report

except a slow and steady increase in size. The axis grows larger and more pineapple-shaped; stiff, dagger-pointed leaves, actual living swords, repel intruders from any direction. At the heart of this dome of blades a spike or pointed cone of tightly rolled leaves incloses younger and younger blades down to the very growing tip of the axis, a tiny white point, leaf-shaped but less than an eighth of an inch long.

After eight or 10 years a striking change takes place among the leaves at the center of the cluster. There appears to be a sudden uprush of energy and the heart of the plant is in a kind of turmoil. Strength and vigor that can almost be felt radiate from the plant now and in some forms of *Y. whipplei* the new blades of the pointed cone show carmine colored tips. The axis rapidly swells and one morning the upthrust tip of the flower stalk appears. Now events follow with a rush. Sometimes the new stalk grows as much as a foot a day. At length appears the wonder. The magic column of deep blue-green ornamented with dagues of purple and crimson has covered itself with countless bells of white.

Curious things have taken place in the plant before this glorious climax occurs. For one thing, a great store of sugar, made by the green alchemy of the leaves from carbon dioxide and water under the sun's influence, has been accumulating in the axis for several years. Perhaps it is this wealth that the swords protect while the plant goes forward with its preparation. At last, when the accumulated sugar in the sap reaches a certain concentration, a kind of trigger action of a chemical nature not well understood, is touched off and the result is the floral miracle.

The yucca has had many uses in the lives of the desert Indians. The leaves furnish strong glistening fiber second to none for cordage. The rind of the dry stalk made the best hearth for the fire-drill and the charred pith the best tinder. Baskets, dye and soap, brushes and ornaments—even a natural needle and thread made by the spiny tip of a leaf with its attached strands of fiber were but a few of its uses. Like the bamboo, another plant of many roles it also served as food. Flowers, fruit and stalk were eaten raw, baked or boiled. But as my old friend, Joe Aguilar, shoemaker of Wickenburg, once said when we discussed the lore of the yucca, "As for myself, I would as soon eat one piece of some angel."

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Ceremonial Dates Announced

Secretary M. L. Woodard has announced that the annual Inter-Tribal Indian Ceremonial at Gallup, New Mexico, is to be held this year August 17-18-19. Thirty Indian tribes are expected to take part in the three-day carnival of native dancing and ceremonials this season.

Seventy-five years ago it was the custom for Indian tribes to raid one another's camps, stealing food and women and children. Navajo and Mexican people now and then signed a treaty to exchange prisoners, but usually the Utes retained their stolen slaves. Rose Daniels, kidnapped by Utes when she was a little Navajo girl of five, grew up as a Ute and has proved to be one of the most valuable members of that Utah tribe. This is the story of Grandma Daniels, the Indian Burbank, who is responsible for a new type of lima bean.

Burbank of the Utes

By DAMA LANGLEY

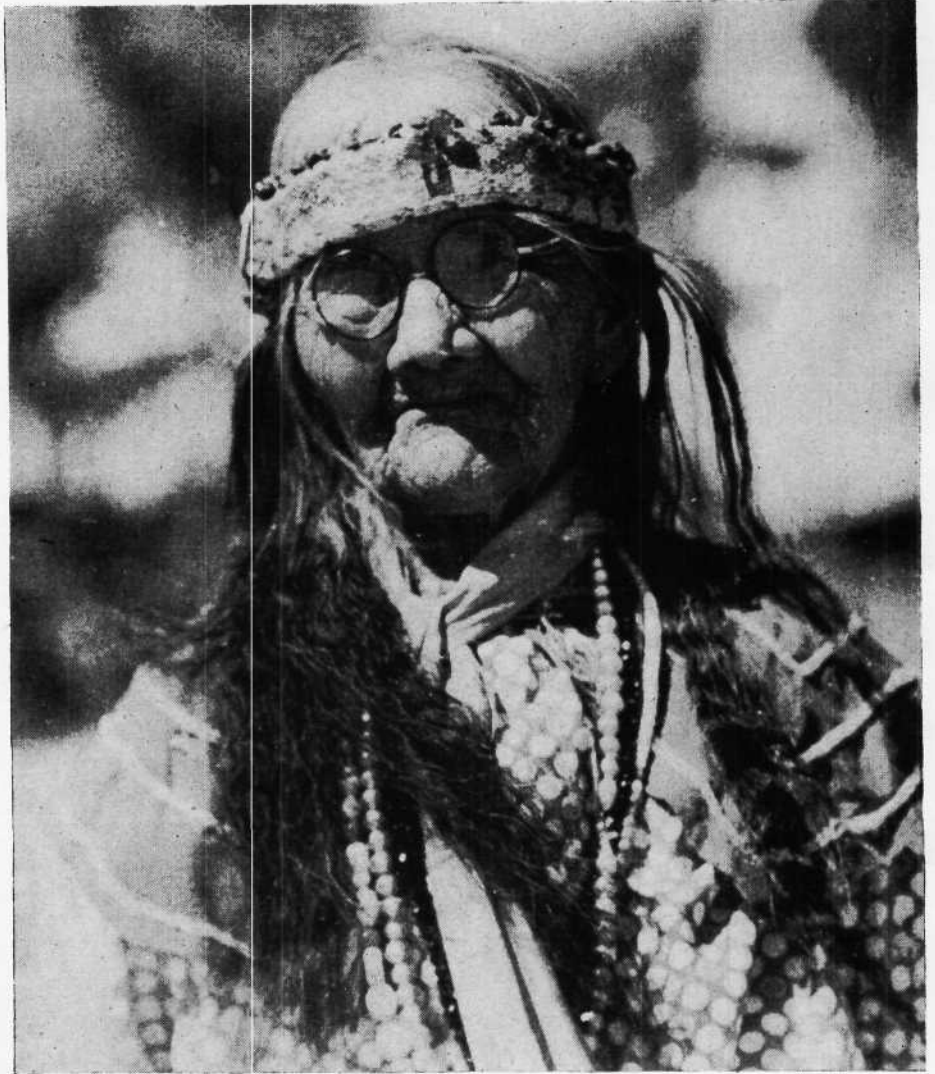
Photos by U. S. Indian Service
Map drawn by Norton Allen

NIGHT was near and a cold wind crept across the desert of northern Arizona while a Navajo woman and her five year old girl drove the family sheep into a corral for safety from wild animals. Mother's voice was gay and reassuring as she urged the reluctant flock into the enclosure made of juniper limbs held together with wild grapevines.

The mud hogan where the Navajos lived would be warm and fragrant with the smell of pine burning in the middle of the floor under the smoke hole. Mutton stew bubbled on the fire and a rock was heating on which the corn cakes were to be baked. The little Navajo girl ran after a stray sheep so that they might sooner go back to the hogan and supper . . .

That was 86 years ago, and only those few childhood memories remain with Rose Daniels, old and wrinkled and almost blinded by sun and glare and wind and smoke of many campfires. For, while the mother and child drove the sheep to shelter, a raiding band of hungry Ute Indians swept down on one of their frequent thieving expeditions, and when they went back to their native haunts in what is now north-eastern Utah, they carried with them the small terrified Navajo girl. They had captured her and were taking her back to be a slave in their tribe.

"Can't you remember more about the time you were stolen?" I asked her, sitting



Grandma Rose Daniels has spent most of her 91 years on the Uintah and Ouray reservations of Utah. She has developed a new variety of lima bean adapted to the short dry seasons of Utah.

near so that her fading sight could reach me.

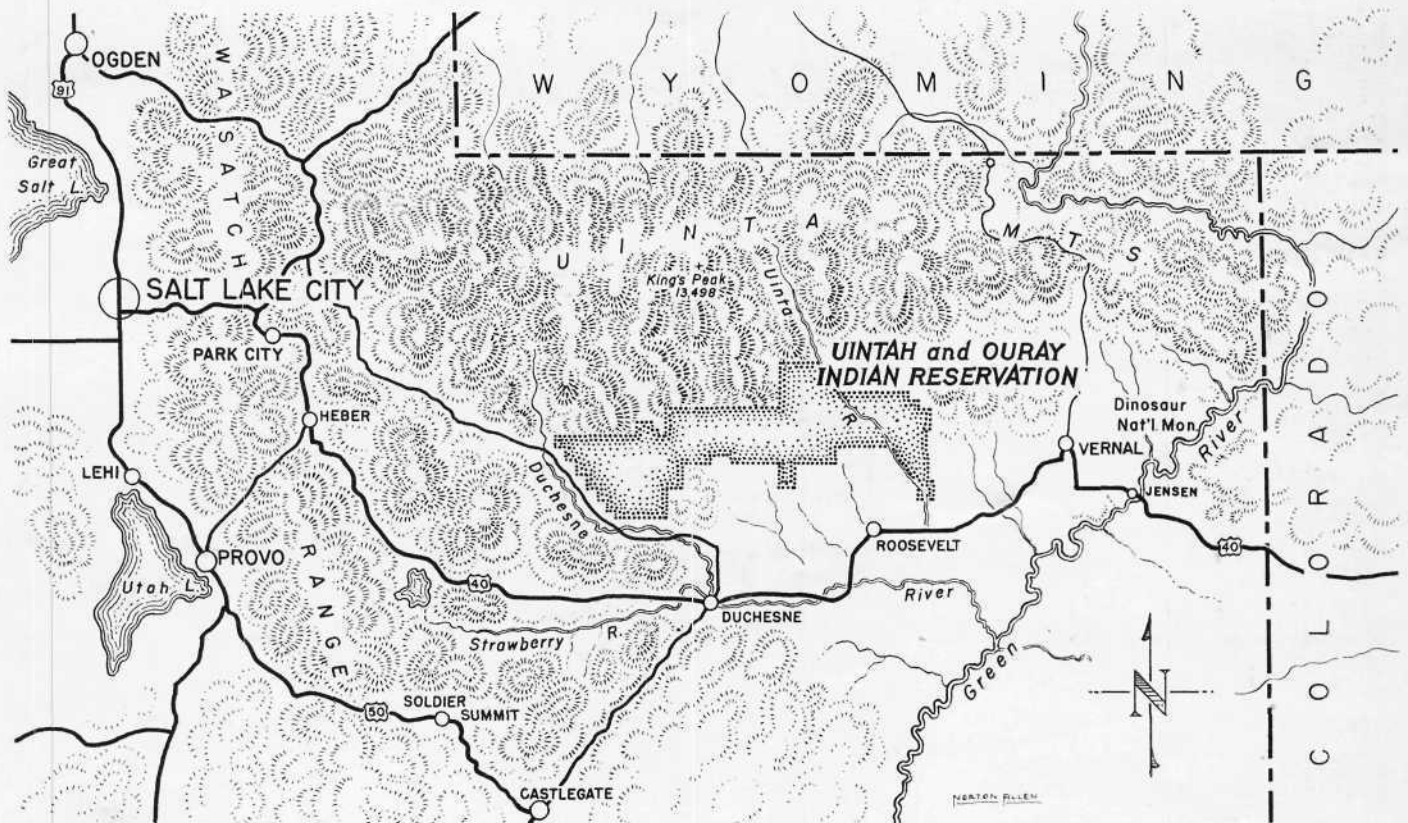
"No. Nothing much of that time. I was so very little and so scared. I only remember being beaten because I screamed for my mother. And I know I was hungry always. I was a slave and as I grew older I did all the hard work around the camp. We had no sheep; we had few horses and most of the ones we had were stolen from other Indians. I could not eat the grasshoppers as the Utes did—they seemed to stick in my throat and make me sick. When I was sent out to drag wood from where high waters had washed it I looked for green things to eat, and I dug roots and ate them.

"The men hunted a lot, and brought the game to the camp for the women to skin and cure the meat. Of course I liked meat to eat but I had to steal whatever I got of it. We cut it in thin strips and hung it to dry in the hot sun. Then it was packed away in pouches made of the stretched guts of the animal. I learned to make clothes out of deerskins and later when I lived in Wyoming I learned to do very fine beadwork."

"When there wasn't meat what did the Utes eat?"

"The red fruit of the cactus. The stick-ers were singed off and the fruit dried. The seedpods of yucca plants were dried too, and there was flour made from mesquite beans and piñon nuts. And always grasshoppers, winter and summer. In the summertime we knocked them down and boiled them for fresh eating. Others we dried like the cactus fruit and saved them for winter.

"All the time I was learning these things I kept trying to get back to my own people. I ran away time and again but I was always caught and brought back and beaten. I never gave up hope. Maybe the Utes got tired of watching and looking for me. One day a white man came to the camp and they sold me to him. He and other people of the Mormon church were buying slaves away from the Utes and trying to stop that tribe from stealing and making other tribes work for them. I was happy when I knew about it. I thought I would go home then. When I was asleep I always dreamed about my



mother and the hogan and the sheep. When other children captured by the Utes were brought to camp I felt unhappy for them. But I didn't go home.

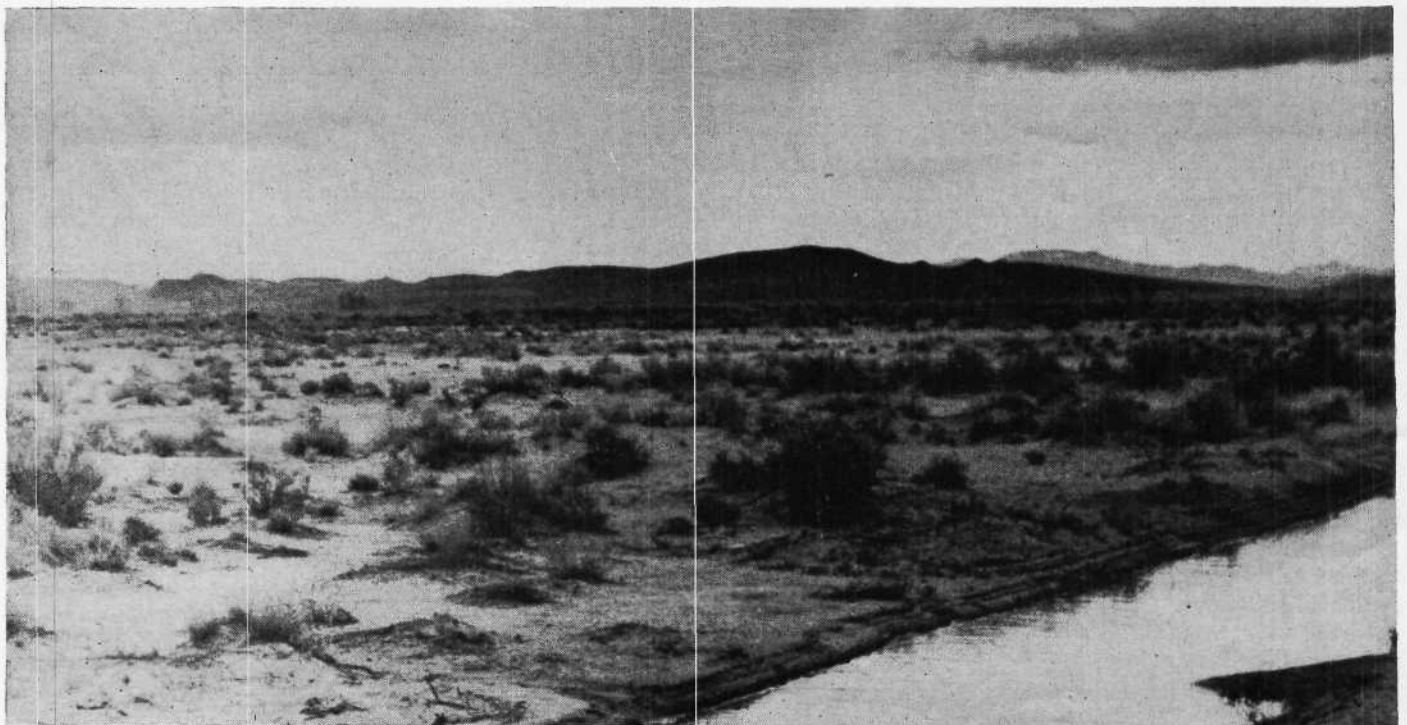
"This white man said my own people had been raiding and stealing from white towns and from the Mexican people and that a big army of soldiers had come and

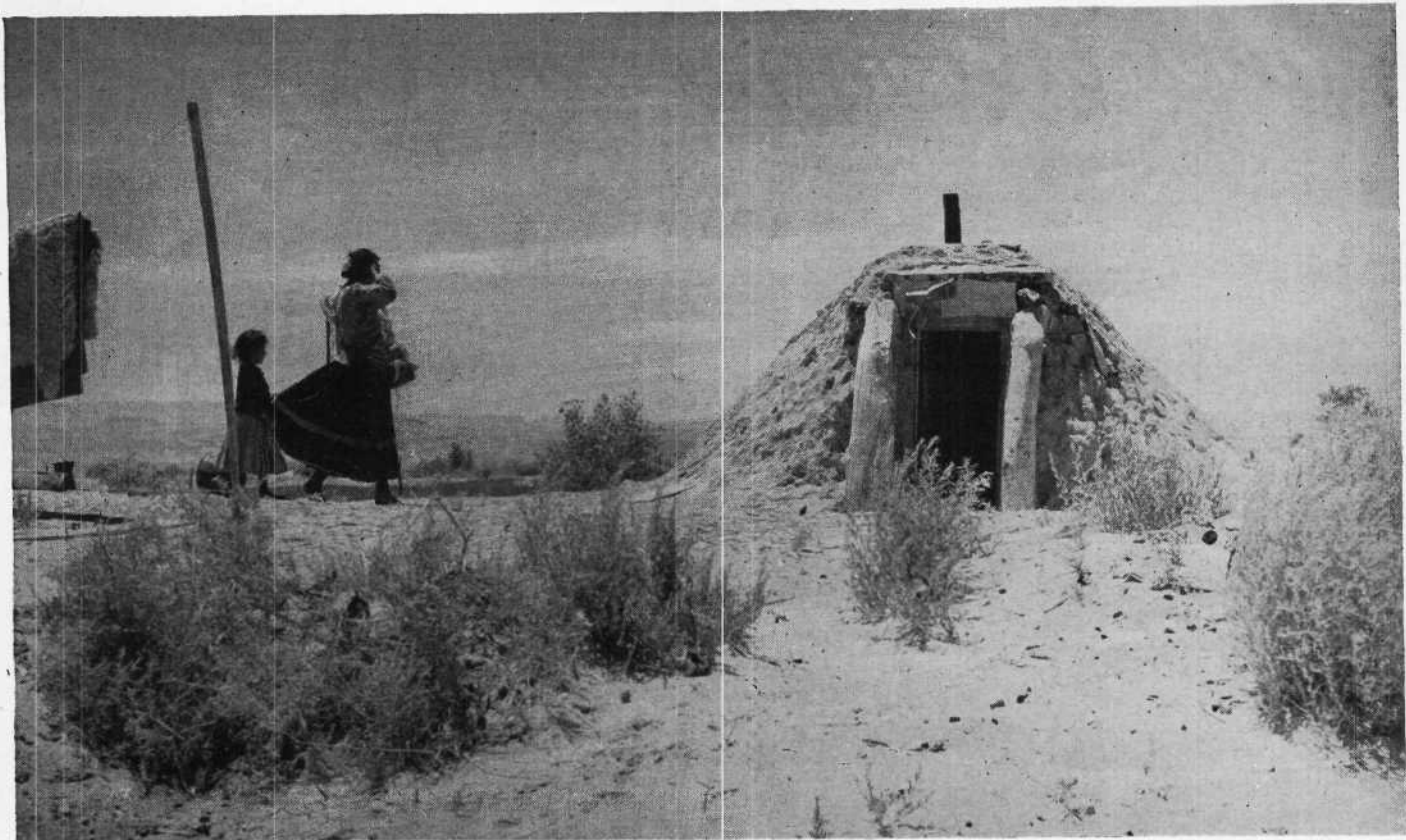
driven them all out of our homeland and now they were far away. I no longer had a home. But his family took me with them to Fort Bridger up in Wyoming where the snow was deep, deep. Here were other tribes of Indians, and from them I learned to make moccasins and hunting jackets for the fur traders and to sew beads on them

in bright decorations. Up there, too, I learned to boil the fat out of a bear without believing a *chindee* would get me. (Bears are sacred to Navajo.)

"With the Mormons I learned another way of life. You know the Mormon people always plant seeds and have things growing to eat. I learned to plant the seed and

From this type of ditch on the Uintah-Ouray Indian reservation Rose Daniels has watered her gardens by an irrigation system of her own contriving. Water comes from Uintah and White rivers.





From such a hogan Rose Daniels was stolen 86 years ago. This typical Navajo hogan is a circular dwelling built of mud, logs and other bits of odds and ends. Navajo women wear colorful, wide flowing calico skirts and velveteen blouses.

to take care of the crops. In Wyoming there was plenty of water for growing food.

"One day I married a Ute who was with a party of trappers. We went back to Utah where I had been a slave. It was different now. I was a wife and I had my own place to live, and I worked only for my own family. I took care of my four babies and my husband." The old woman stopped talking and thought awhile.

"I planted seeds."

She planted seeds. This waif pushed around by fate from one place to another and back again, planted seeds in the desert home of her captors and made them grow. Her husband helped her with her planting, and soon others wanted to have food like Rose Daniels raised and saved for winter eating. They, too, planted.

Year after year this Navajo woman, who was now more Ute than any of its blood daughters, planted her seeds. She raised cabbage and onions, carrots, turnips, tomatoes, peas, beans and potatoes. Of course the Indian corn and melons and squash were not neglected, but after awhile she grew ambitious and added asparagus and lettuce and cucumbers to her planting.

Water, of course, was the crying need, and so Rose devised her own irrigation system by making little furrows among her plants and guiding water from the feeble streams in the Uintah and White rivers.

Each year she watched her plants and set aside the best to be used for seed. As she ga-

thered the seed of each vegetable she grew, she placed it in a little glass jar or paper sack, and smiled happily knowing that she could plant again when spring came. To her the never ending battle against blasting winds, drifting sands, drought, grasshoppers, cutworms and even floods, was a challenge gladly met and conquered.

Six years ago an official of a horticultural station visited Grandma Daniels, as she is now called by everyone. He looked at her garden, and he remembered the report made to the Mormon church by their official exploration party. In 1861 this party was sent to the Uintah basin, where Rose Daniels lives, in search of a region where pioneers could be sent to establish homes and further the program of the church. The report read: "Uintah Basin is measurably valueless (the exact spelling) except to hold the world together!"

The visitor looked at the garden of the frail old Indian woman and examined the containers of seed she proudly brought forth. Among her precious seeds he found *three lima beans*.

"May I take these with me?" he asked. Grandma Daniels was happy to share her treasures, and so the three seeds went back with the agent to the experiment station at Cheyenne where they were planted. From these three seeds came the newly developed lima bean, placed on the market for the first time last year, and which is the only known lima bean which can be grown successfully

in the short dry seasons of Utah, Wyoming and South Dakota.

The Uintah-Ouray reservation records say that Rose Daniels was born in 1854, ninety-one years ago, but she still works among her plants. This little wrinkled Burbank of the Indians says we must raise what we eat—no matter where we live.

GOVERNOR APPROVES PALM SPRINGS TRAMWAY PROJECT

Gov. Earl Warren of California has signed a bill authorizing the construction of a \$1,360,000 tramway from the floor of Coachella valley to a point near Hidden Lake at 8,500 elevation on Mt. San Jacinto. The measure, introduced by Assemblyman Phil Boyd of Riverside county, provides for financing of the project by private capital under the sponsorship of the Mt. San Jacinto Winter Park Authority, composed of two members each from Palm Springs and Riverside county, and three named by the governor.

Under the provisions of the bill, the new park authority will be authorized to issue up to \$3,000,000 in revenue bonds.

The bill passed the assembly May 26 and the senate June 13, despite opposition from the Sierra Club and other conservationist groups in the state. Opponents of the measure took the position that San Jacinto is one of the few remaining primitive areas in Southern California, and should be preserved in that status.

Mines and Mining . .

Washington, D. C. . . .

Cripple Creek, Virginia City, Tonopah, Kingman, Nevada City and other mining camps throughout the West were ready to go back to work July 1 upon word from War production board, which lifted ban on gold mining. Gold operations had been suspended since October 8, 1942 to conserve machinery, supplies and labor for more urgent mineral production. Recent action, however, carries only the low priority rating (AA5) granted to business for repair, maintenance and operating supplies.

Winnemucca, Nevada . . .

U. S. geological survey has announced its intention to complete or assist in the completion of a series of state geological maps and a postwar aerial mapping of the state of Nevada, a project which had been urged by the State planning commission and American association of state geologists. Project is designed especially to aid small property owners in mapping, sampling and advising on procedure in order to encourage and stimulate mining. Fred L. Humphrey, who already has made bureau examinations and reports, has been assigned to further studies in gold mining areas this summer.

Winnemucca, Nevada . . .

Paul Soule, San Francisco capitalist, and associates have contracted to develop gold properties of Mrs. Josie Pearl, 98 miles northwest of here. Property includes 12 lode claims, 200 acres placer gold mining property, with water rights.

Salt Lake City, Utah . . .

Utah Oil Refining company, holder of world's record in production of 100-octane gasoline at Salt Lake City refinery, expects to increase substantially its production upon completion of a new pipe line September 1, E. S. Holt, vicepresident in charge of manufacturing, announced June 20. This plant is one of two in nation using a new process for making a high-octane component known as neohehexane.

Trona, California . . .

Mining properties in Trona, Randsburg, Kernville, Mojave and Death Valley areas have been studied recently by E. D. Arthur, manager Los Angeles county chamber of commerce mining department, completing a market survey. Report is intended to put operators in touch with markets where their ores are most needed. Chamber publishes such a report annually.

San Francisco, California . . .

State division of mines, still receiving inquiries about assessment work requirements, repeats that act of congress of May 3, 1943, suspends assessment work for the duration. "Until the hour of 12 o'clock meridian on the 1st day of July after the cessation of hostilities in the present war as determined by proclamation of the President or concurrent resolution of the Congress; *Provided*, That every claimant of any such mining claim, in order to obtain the benefits of this Act, shall file, or cause to be filed, in the office where the location notice or certificate is recorded, on or before 12 o'clock meridian of July 1 for each year that this Act remains in effect, a notice of his desire to hold said mining claim under this Act."

Tonopah, Nevada . . .

Lee Hand, largest producer of turquoise in Nevada, recently announced his intention of reopening the No. 8 turquoise mine, 25 miles northwest of Carlin, once a heavy producer of highgrade gem stone.

Bishop, California . . .

Darwin mines property has been purchased by Anaconda Sales corporation, subsidiary of Anaconda Copper company, it was disclosed in June. Transfer was to take place August 1. Mine and mill property, which has been employing about 100 men producing strategic lead ore, includes about 2000 acres near Darwin.

Yearning for a . . .

POST-WAR KITCHEN?

As you catch a moment's relaxation from the war-work whirl, do you ever take a longing look into the post-war future? Those war bonds you're buying and keeping now will help you fulfill your brightest dreams. Tomorrow's kitchens are not just figments of the imagination. They're real, with fine improvements of the appliances you've long known and appreciated. Tomorrow's kitchens will be pleasant to work in . . . more truly than ever the center of home life.

Among the many post-war appliance marvels to watch for is the refrigerator with the magical home-freezer compartment, the fully automatic range, and the inexpensive Steam Electric iron. Keep buying bonds and plan now for your kitchen of tomorrow.

Imperial Irrigation District



Use Your Own Power—Make it Pay for the All American Canal

Ever since Marshal South, in 1940, began his series of articles in *Desert Magazine* to describe an experiment in simple natural living which he and his family are evolving at Yaquitepec on the western border of the Colorado desert, he has had readers of diverse opinions—and prejudices. Some are frankly puzzled, many curiously interested, while still others actually are hostile in their criticism of such a life in these "civilized" days. Although every article, in some measure, has explained the Souths' purpose, Marshal this month attempts to answer a little more specifically a typical question: "Just what do you get out of separating yourself from civilization and walling up yourself and family in a desert solitude?"

Desert Refuge

By MARSHAL SOUTH

IN THE early dawn Yaquitepec belongs to the birds and the desert bees. Not the honey bees. But the great, black, bumbling carpenter bees. These big handsome fellows, who bore and chisel catacomb-like homes for themselves in the soft pith of dead mescal stalks, come out in the early morning to buzz and boom all along the eaves of Yaquitepec. There is a peculiarly comforting drowsy peace to the sound. Something that speaks of the wilderness and freedom. When one has just awakened from sleep and is considering, in a detached sort of way, the prospect of getting up and beginning the work of the day, the deep booming drone of these giant bees is soothing music.

We often have wondered at the regular rite which they perform of seeking and bumbling and bumping all around the eaves before sunup. They are persistent about it. And it is not just one round of the house—it is many. There cannot be anything very attractive about roofing iron. And certainly it is not edible. We have suspected that during the night tiny specks of moisture may condense on the undersides of the iron sheets, where they project over into the eaves troughs. Perhaps that is what the bees are after. But if so they are sharper sighted than we, for repeated examinations have failed to disclose any traces of dampness. Nevertheless we are still inclined to the notion that water is what the bees are after.

And why not? In portions of the African desert, where there are great daily temperature changes, moisture will collect in the deep interiors of loosely-piled rock cairns. In fact in some sections specially constructed water towers—very thick walled buildings—are fashioned to take advantage of this very circumstance. In these towers, whose walls are pierced with many small openings to admit the heated air, there are arranged a maze of slanting pieces of slate, upon which the warm air condenses and forms drops of water. It is the steady dripping from the slanting slates—collected in a hollow in the floor and led off in a stone gutter—which furnishes the steady trickle of water which the water tower provides. Not much of a supply in comparison to the great labor of construction involved. But water is water in any desert.

There is not much mystery surrounding the morning twittering of the birds around our eaves. These little bright eyed dwellers of the wasteland are inspired by several reasons. In the nesting season it is frankly a business one. For there are many desirable scraps and threads to be found around and among the house walls. Yaquitepec is proud of the distinction—which it shares with all true desert establishments—of being compounded of a great variety of building materials. And, in addition, as there always is some portion under construction, the harvest of mescal fiber, fragments of cloth, frayed rope scraps and trailing sections of gunny sack, is fine for nest



Nest of the Desert Sparrow in a low Bigelow Cholla cactus, growing among Desert Agaves, or Mescal. Watercolor by the author.

builders. On their quest, bird couples flit and flutter along the wall tops, twittering and tugging at ends and fibers with great good will.

The birds — who are fresh air advocates themselves — thoroughly approve of our house construction, and sometimes come in to look it over better. The most recent of these self-appointed inspectors was a tiny canyon wren that hopped in through a hole up near the summit of the west wall two days ago. The sun was just lifting above the eastern ridge of the mountain and in the level golden shafts that struck in through windows and smaller openings our tiny visitor found plenty to occupy its curiosity. If it was scandalized that we were not yet out of bed it at least kept its feelings to itself. After perching for awhile on the suspended length of mesquite wood that does duty as a chandelier over the table, it proceeded to a flitting examination of the house. Pictures, clay ollas, typewriters, water jars, baskets and benches—each in turn was selected as a perching place—while, with much head cocking, our diminutive long-billed brown sprite studied attentively every detail of this mysterious realm that it had penetrated. Apparently satisfied with its adventure, it flew through the archway into the next room and attempted to hop out through the window. Then it encountered a mystery as baffling as the fourth dimension is to humanity. The window was shut. Against the glass pane—as against some supernatural barrier through which it could see but not pass—it fluttered and beat wildly.

Rudyard, Victoria and Rider scrambled out of bed and dashed to its aid. But as is often the case with fear-crazed humans, it misunderstood their motives. There was a whirl of brown feathers and a fleeting rush—and the wren had disappeared. We all searched for it. We suspected that it had darted into the other room and was now hidden in some dim corner up above the mescal poles which are laid for seasoning along the ceiling beams. But our search was unavailing. We had just given it up when the wren again was at the windowpane. This time with the aid of a wide cloth scarf it was captured, conducted gently to the opened door and liberated. It flew into a low thicket of squaw tea bushes and vanished. The adventure

was over, but it provided the children with a topic of conversation and speculation which kept their minds busy for some time.

Little things? Of course. But all of that adventure which we call life is built up of little things. And perhaps if time could be found in this frantic rush of progress for more attention to little things the big things might be simplified. It is one of the happy necessities of life at Yaquitepec that every incident, however trivial, calls forth attention and thought. Particularly in the matter of desert plant and animal life by which they are surrounded, are the interests of our youngsters held and drawn forth. The birds, the squirrels, the lizards and the pinacate bugs—all are to them part of the family. And incidents befalling these little brothers of the wild are taken with a deep seriousness and sympathy.

There was, for instance, the tragedy which befell the home-making dreams of the cheerful little pair of desert sparrows, who had decided to build their nest in a low cholla that grew among a clump of mesal plants just back of the house. Rudyard discovered this skilfully hidden little home when it was almost completed. Thereafter the busy little birds, as they flew back and forth bringing in fibers and grasses, were under almost constant though cautious observation by one or other of our youngsters. Interest reached its climax when the little nest had become the cosy container of three tiny white eggs. Victoria went about in a state of constant anxiety and watchfulness for fear that the squirrels would discover the little house and rob it of its precious treasure. The day when the eggs would hatch was looked forward to eagerly.

But the eggs never hatched. What it was we never will know. A hawk, perhaps. At any rate the nest suddenly was left desolate. Days passed. And weeks. And the three tiny white eggs lay there lonely beneath the glare of the desert sun and under the shine of the desert stars. For a long while Rudyard, in whom hope dies hard, clung to the scant comfort that maybe the sparrows were off on a temporary excursion and would return. But slowly, with the steady passing of the long days, even his hope died. Finally he set a time limit. "I shall wait just a month," he announced sorrowfully. "If they don't come back by that time I will know that something has happened. And I'll take the nest and eggs into the house and keep them. Just to remember. It isn't any good leaving them out to be finally torn up by the wind and rats."

He was suspiciously close to tears. For Rudyard is tender-hearted. By the end of the month, time had softened the sorrow. Gravely he went out and brought in the little deserted home and its three tiny white unfulfilled promises. It hangs now, from a slender wire, just below the deserted nest of a weaver bird, almost within hand reach of where I sit typing.

A correspondent demands to know "just what do you get out of separating yourself from civilization and walling up yourself and family in a desert solitude?" He is puzzled. He cannot understand why it is that we are willing to turn aside from the brassy parade of progress, or to deny ourselves electric lights and the priceless privilege of radio music sponsored by Purfued Soap.

Well, since he is not alone in his disapproval of our having dared to turn aside from the Grand March, I shall answer his question.

In the first place we get freedom. Freedom of mind and freedom of body. In this sunlit desolation of rock and thorn, where the sun beats down through an unending march of days and the desert silence which broods among the boulders and ocotillos is broken only by the harpings of the wind, we can spread freely the net of our minds to gather those priceless, fundamental stirrings of the infinite which are most easily come by when one is close to nature. Our thoughts are our own—to weigh, to digest, to evaluate. No coloring lens or distorting mirror—either of the printed word or the shouted aerial tirade—can stir our judgment, or influence it. What we think we

think ourselves. That which we value we can develop. That which we hold to be trivial and unworthy we can escape. By dawnlight or starlight or in the glare of noon we are spared the constant effort of thrusting aside a ceaseless stream of ready-made thought, which sponsored by every diverse "interest" under the sun, beats constantly upon the eyes, ears and brain of the marcher in Progress' proud parade. Thus, quite unassisted, we can do our own thinking more easily. Not that it is impossible to think, even in the clamor of a boiler factory. But the process is more efficient and more pleasant in the wasteland solitudes where silence is stirred only by the desert wind.

And, even as it grants us freedom of mind, so does the desert grant us freedom of body. Here, far in the friendly shelter of our sun-seared rocks we need bow no knee to any sacred cow set up by the gods of fashion or of convention. Nature, the Great Mother, who with wise and loving hands directed the costumes and the health of our dusky Indian predecessors upon these wild slopes, extends her kindly care over us in similar fashion. When the snow falls or the bitter winds roar we can, if we feel so inclined, wrap ourselves in the warm folds of a blanket. When the sun shines and the warm breezes bring the glad tang of bodily comfort over the ridges we can discard our blanket. And there are none to say us Yea or Nay. From the cramping bondage of shoes our feet likewise have escaped. If, in the winter, the ground is frozen, or if, in summer, the rocks and gravel are too hot for comfort, we can—and do—wear a simple sandal such as the Yaquis wear. But for the most part we can go barefoot. And this without "scandal" or exposing ourselves to the "pity" of our neighbors, or the kindly "advice" of interested medicos.

Thus, on both counts of mind and body, do we secure a freedom which is denied those who cannot bring themselves to forsake the hollow bribes of progress. And with the gaining of this freedom we gain also something else. The boon of natural health.

Further, our "unnatural turning aside" has brought us peace and contentment. It has brought us to the state of consciousness where each day is a separate jewel to be lived and enjoyed for itself. Where each hour is a living thing, filled with the singing joy of fundamental life. Of the whispered mysteries of the drifting wind, of the glad notes of the birds, of the glinting sparkle of sunshine gold upon rocky pinnacle or upon swaying thorn. It has given us a deep kinship and understanding with all nature, the abiding sense of the oneness of all things, a clearer perception of the glory of the Great Spirit, as much in the jeweled eye of the desert lizard as in the majesty of the desert dawn.

Therefore, as through hour and day and month and year, we pursue our way upon this Pilgrimage of Life, finding joy in simple things—in the sun-cast mottled shadows of the clouds creeping in patterns across the tawny flanks of barren mountains, in the webs of purple mystery which sunset wraps about the lowland wastes, and in the long grey fingers of the fog which, at seasons, loom ghostly in the passes of the western sierras—we are content. We have found peace. Has my accusing correspondent also found it?

TRUE GREATNESS

*True greatness lies within the soul.
And be it beggar, with his bowl,
Or monarch, praised with cheers and din,
Still must he build true worth within.
For worldly power and pomp and pelf
Are here today—and gone tomorrow.
But majesty, born in oneself,
Will stay, whatever grief or sorrow
Torment our lot with weighty care,
As on we fare.*

—Tanya South

HERE AND THERE... on the Desert

ARIZONA

Homesteading To Be Delayed . . .

YUMA—While it is hoped war production board soon will release strategic materials for use in completing canals and structures on first 30,000 acres of Gila valley project, south of here, it probably will be three years before the land is opened for homesteading, J. R. Rohrer, bureau of reclamation engineer, declared in June. Of the 30,000 acre unit, 22,000 acres are irrigable and of this 13,000 acres are government owned, the remainder being privately owned or not irrigable. Project eventually will include 75,000 irrigable acres.

First Papago Grammar Written . . .

TUCSON—If you can't speak Papago, you can learn. Dr. William Kurath, professor of German at University of Arizona, has prepared a *Brief Introduction to Papago, A Native Language of Arizona*, believed to be the first printed record of the language of these southern Arizona Indians. Bulletin deals with sounds, word formations, sentence structure, vocabulary, texts and songs of the Papago tongue.

Navajo Gods Didn't Rumble . . .

WINSLOW—Theories about the cause of recent "rumblings in the mountains" of northeastern Arizona were discarded when report from Fort Wingate, New Mexico, declared they came from detonation of suspected defective aerial bombs there. Rumblings had been heard from distances of more than 50 miles, at approximately 7 a.m. for 10 days before mystery was cleared up. They had seemed to emanate from Castle Butte, 6000-foot promontory on Navajo reservation 25 miles northeast of here. Some of the Indians, it was reported, thought "the devil was moving around, getting ready to swallow the Navajos."

Another Meteor Crater? . . .

FLAGSTAFF—A flaming heavenly body was seen streaking through the sky the whole length of Arizona night of June 19 and was believed by residents of northern Arizona to have fallen somewhere in that area. Dr. Paul Jose, of University of Arizona observatory, said meteor probably was 500 feet in diameter, was traveling five to 10 miles per second, and was about 25 miles above the earth's surface. It first was seen at Douglas, then Tucson, Phoenix, Prescott and Flagstaff.

Betatakin trading post at Shonto has been purchased from Harry Rorick by Reuben Heflin, it was reported in June. Heflin recently sold his Oljato post in Monument valley to Fred Carson, Jr. of Nazalinni.

CALIFORNIA

Waste Water Raises Salton Sea . . .

EL CENTRO—Elevation of Salton Sea has increased 4.75 feet during the past seven years, according to data of W. E. Hartzog, superintendent of water distribution and drainage construction for Imperial irrigation district. On May 1, 1938, elevation of sea was minus 245 feet. Reading May 1, 1945, was 240.25 below sea level. Figures indicate that waste water flowing into sea from Imperial Valley's canal system decreased nearly 50 per cent during the seven year interval, while water from the drainage system and from waste ditches recorded a proportional increase during the same period. Superintendent Hartzog asks that farmers, to help remedy this situation, cut to the lowest possible minimum the waste water from their irrigation fields.

Land Surveying Office Opened . . .

TWENTYNINE PALMS—Jack S. Raub, Newport Beach surveyor, opened an office at Joshua Tree in June. He will carry on general land surveying in this desert area. Walter Giles will be in charge of the office.

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May Clean Out Desert Waterholes . . .

BLYTHER—Plans are under way for settlement of damage done to desert wells during the period of occupancy by desert troops. At that time many wells were filled by the troops to prevent drinking from any contaminated waterholes. The well on the Prouty ranch was filled with tin cans; the famous Brown's well near Rice was choked with debris. Anyone knowing of a

desert well, waterhole or spring that was filled by the army is urged to notify Ed F. Williams, president Blythe chamber of commerce, giving all information available, including date well was filled, whether it was on private or public domain. Funds awarded in any settlement will be used to clean out the wells.

War-Damaged Highways Repaired . .

BLYTHER—Two highway sections, south and west of here, which were damaged by heavy army traffic during the desert training period, were scheduled for reconditioning and reconstruction during June. Sections of the north-south highway through Palo Verde valley from Palo Verde on the Imperial county line, to a point six miles north of U. S. Highway 60 on Intake boulevard, will be rebuilt at a cost of \$109,000. Work had already started in May on reconstruction work from Black Rock to Shavers Summit on Highway 60 on \$74,000 contract.

Beaver to Aid Fishermen . . .

INDIO—One of these days some mountain climber or desert rat is going to be surprised when he climbs up Tahquitz creek and comes face to face with a beaver. In June, five golden beaver trapped in Tuolumne river were brought to the Idyllwild section by Bill Pollard, fish and game commission, and planted in upper Tahquitz creek. They are the first of their kind in this section of the country. Their dams are expected to make excellent fishing spots.

NEVADA

Nevada Senator Dies . . .

CARSON CITY — U. S. Sen. James Graves Scrugham, 65, died June 23 in San Diego naval hospital. He was elected to senate in 1942 to fill unexpired term of the late Sen. Key Pittman. Prior to that he had served 10 years in lower house, was one-time governor of Nevada.

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Gila Monsters Coming to Nevada . . .

BOULDER CITY—Discovery of two Gila monsters in Boulder Dam national recreational area this summer has piqued curiosity of Dr. Gordon Baldwin, park service naturalist, and his assistant, Wilbur Doudna. Gila monsters are considered rare in this area, their common habitat being southern Arizona. Dr. Baldwin wonders if they are "migrating in this direction." So if you see something that looks like an animated colored beaded bag, park service officers here want to know about it. Don't bring it in, for the Gila monster is poisonous. Just photograph it, if you wish, then tell park service the location and date seen. It has a heavy body, round stubby tail, is orange or salmon in color, variously marked in brown or black. Its hide is rough, resembling a beaded surface. Those which have been reported were in Eldorado canyon, Valley of Fire, Gold Basin, Emery Falls near mouth of Grand Canyon, Hemenway Beach, Black mountain, Overton.

Mining Paper Editor Dies . . .

GOLDFIELD—A. R. Hopkins, editor and publisher of Goldfield News and Tribune the past 12 years, died June 12. He had been connected with newspapers from Kansas City to Florida, was two years managing editor of North China Star in Tientsin, China, did newspaper work in Tokyo, and was managing editor of the Telegram in Havana, Cuba, for several years. He was state assemblyman from Esmeralda county in 1935.

NEW MEXICO

Anthropologist Completes Project . . .

ALBUQUERQUE — Measuring heads of over 3000 GIs to design the most comfortable gas mask is a project in which Paul Reiter, instructor in anthropology at University of New Mexico, has participated as a graduate student the past 18 months at Harvard university. He has been working on a scholarship toward his doctor's degree under Dr. Earnest A. Hooten, Harvard anthropologist. Postwar application of the findings—for fitting glasses, hats, dental and medical devices, etc.—is expected to make the studies of widespread value.

Ranchers Make Way for Bombing . . .

LAS CRUCES — Ranchers were reported ready in June to comply with government order to vacate more than half million acres in Dona Ana and Otero counties which the army has announced will be converted into a bombing range. It was stated by Horace H. Hening, secretary New Mexico Cattle growers association, that the ranchers would be permitted to continue using the acreage, receiving advance notice when the range would be required for bombing practices.

Pioneer Sheepman Dies . . .

ALBUQUERQUE — Frank Bond, who rose from proprietor of a territorial general store in northern New Mexico to become one of the country's biggest sheep and wool operators and to establish a chain of stores in the state, died June 21 at a Pasadena, California, sanitarium, aged 82. His importance to the Southwest is recognized in *Shepherd's Empire*, by Charles Wayland Towne and Edward Norris Wentworth, scheduled for July publication by University of Oklahoma Press.

Walter O. Berger of Albuquerque, long prominent in state legal and banking circles, was appointed by Gov. Dempsey in June to state highway commission.

UTAH

Baby Antelopes End Long Trek . . .

SALT LAKE CITY — A pair of tiny month-old antelope "Bill" and "Dollie," captured in a remote section of northeastern Utah, were being tamed and cared for by employees of Tracy aviary in Liberty park after a long journey from their native home. The frightened little brown animals were given into the care of a mother goat. They had been captured by Hal Wilson, aviary keeper, Clarence Thompson and John Lach, on the Paul Williams ranch near Lynnwood, a trip which required 50 miles travel on unimproved roads, an 18 mile horseback ride and a crossing of the Green river in "The Flying Dutchman," a cable car.

Studies High Altitude Life . . .

PROVO—Dr. C. Lynn Hayward, associate professor of zoology at Brigham Young university, has been awarded grants totaling \$400 for research in ecology. The study will involve distribution and habits of plants and animals of high altitude areas in Utah, Colorado and Wyoming. Dr. Hayward plans eventually to make similar studies throughout the montane West.

Writer Awarded Fellowship . . .

SALT LAKE CITY—Dale L. Morgan, former Salt Lake City writer, has been awarded a Guggenheim fellowship. He is one of three Farrar and Rinehart authors to be so honored. The new work by Morgan, who also wrote *The Humboldt*, in Rivers of America series, will stress influence of Mormonism on American life. In 1940 Morgan assisted Utah WPA writers' project in producing Utah State guidebook.

Roy A. Schonian, for 13 years editor and publisher of the Uintah Basin Record, Duchesne, was appointed manager of Utah State press association in June, with offices in Salt Lake City. He had sold his paper May 1944.

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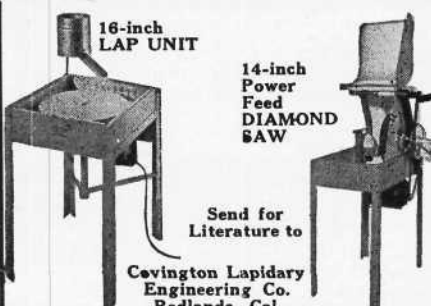
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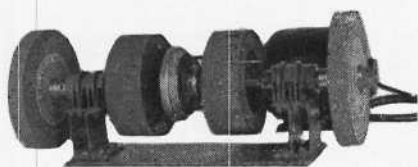


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AMATEUR GEM CUTTER

This page of Desert Magazine
is for those who have, or aspire
to have, their own gem cutting

and polishing equipment. Leland Quick, who conducts this department, is former president of Los Angeles Lapidary society. He will be glad to answer questions in connection with your lapidary work. Queries should be addressed to Desert Magazine, El Centro, Calif.

By LELANDE QUICK

In the May issue of DESERT I asked for information about the type of lubricant readers are using in their diamond saws, the information to be passed on to William Baxter of Bethesda, Maryland, for some original research he is doing on the subject. I should have used the word "coolant" instead of "lubricant" as the oil is used to cool the blade and not to lubricate it. The response was very gratifying indeed and I wish to thank the many people who offered voluntary advice. It all has been passed along to Mr. Baxter. The consensus can be summed in a single sentence: Water soluble coolants are unsatisfactory; oil is preferred in varied combinations but No. 30 motor oil with kerosene in equal amounts is used by the great majority of gem cutters.

Some of the processors sawing quartz crystal for the government use Prorox C made by Socony-Vacuum Oil company and claim that the blades run cool and have a much longer life. Others use a product made by Standard Oil company called Superla Soluble Oil diluted with water in the proportion of one part of oil to six of water. These soluble oils of the big refineries are probably all much alike and too expensive. Baxter himself advises, "I have tried a number of the water soluble oils but none perform as well as the kerosene and oil mixture. I have tried an oil made by Gulf Oil company called Mechanism Oil A (also B and C). It works well on small pieces but I thought it did not cool the saw as well as the oil-kerosene mixture."

The advantage of water soluble oils or water solutions of aerosol is that sawed specimens are cleaner. The disadvantage is that the water evaporates and unless you replenish it constantly you still have the mess of the oil to contend with and the additional danger of adding too much water and getting a rusty blade.

The ideal mixture would be one that is not messy, that doesn't penetrate the stone, that properly cools and prolongs the life of the blade and is inexpensive. Nothing has come along as yet that combines all these desires as well as the 50 per cent kerosene-oil mixture. Soft materials such as turquoise usually are sawed in such small pieces that they can well be cut in the trim-off saw with a copper disk and water so that they are kept entirely away from oil. Larger slices can be washed promptly with soap and water. There is no solution to the oil problem like a bucket of suds and a brush. I had a friend who thought he had a bright idea for the oil problem. He merely dropped the slices as they came from the saw in a box of sawdust to absorb the oil. He first tried it on about 50 slices of rhodochrosite and they all turned black so that he ruined about ten pounds of the best rhodochrosite I ever saw as that material is very porous and it ate the oil like a rescued war prisoner eats K rations. If there is further information on this subject I still would like to have it.

I recently conducted an open forum on dopping stones before the Los Angeles lapidary society that was not only a very interesting evening but also a very revealing and educational one. Many members brought their equipment and demonstrated at tables with groups of about ten at each table. Every ten minutes the groups would move so that at the end of an hour everyone had seen at least half a dozen methods of

dopping stones. There were many unique methods shown for holding the stone, some of which did not use wax at all. One man had a small vise into which he clamped the stone, another used adhesive strips longer than the stone so that he could manipulate with both hands. Another man used large nails for dop sticks and another used stationary pincers. There were many devices for heating the stones—old flat irons, gas burners, etc. but none of them as efficient, safe or cheap as the Bunsen burner.

A survey of the many methods seemed to indicate that the following is the most efficient and satisfactory method of dopping stones so that they will not come off the dop while being worked. Secure some discarded dowel sticks in various thicknesses from a local carpenter or cabinet shop and cut them into lengths adaptable to your own hands. Buy an alcohol lamp from a laboratory supply house or your druggist can secure one for you and sell you the alcohol. Secure sticks of sealing wax from your mineral supply dealer and use it as it comes. There is no convincing evidence that boiling it with shellac or mixing it with any other substance makes it any better. Heat the stone as you will but many lapidaries make this detail too complicated. Your dentist or physician will probably supply you some cast off pincers with which you can hold the stone directly in the flame of the alcohol lamp, being careful not to get it too hot. Test it on your cheek which is more sensitive to heat than your fingers. Move the stone in the flame and test it until it gets uncomfortably warm to the touch (not burning hot) and lay it aside until you hold the dop stick (which has been previously waxed) in the flame, twirling it to keep the wax from dripping.

When the wax is soft and hot, but before it gets runny, stick it on the stone and mold with the fingers which have been dipped in water. Do not dip the dopped stone in water to set it as it sets too rapidly and the stone will come off the stick as you work with it. Have a box or a can filled with sand and stick the dopped stones in the sand (stone upright) to cool for future grinding. Remove the stones with a knife after heating slightly in the lamp and clean the remaining wax from the finished gem with a little acetone on a rag. Some stones are stubborn and you may be afraid of too much heat. These can be placed in the refrigerator or if you are in a hurry stick them in a bowl of ice and they will come clean from the dops in a few minutes.

Opals will crack if you heat them very much. If you are in a position to secure any you will find the wax used by the American railway express company is the best there is. Mixing sealing wax with beeswax makes it softer; mixing it with shellac makes it brittle but these factors are not desirable. Some enterprising dealer surely could make money and become popular by offering a complete dopping set with illustrated instructions. The set should contain various sized dop sticks, a lamp, pint of alcohol, several sticks of wax and a pair of pincers. And perhaps a dopped stone should be included to show the end result. Has any reader something to offer that is an improvement in this method?

DID YOU KNOW . . .

- Amber of poor quality has been found in several eastern states.

GEMS AND MINERALS

ARTHUR L. EATON, Editor

PRIZES AWARDED AT ANNUAL PASADENA SOCIETY MEETING

Mineralogical Society of Southern California held its most successful annual meeting June 10 at the L. W. Giddings home in Pasadena. A large crowd enjoyed a raffle, auction and grab-bag which netted \$154 and an exhibit which ranked with the all-time best.

Prizes were awarded in the following classes: General minerals:—1-Lillie Rohrer; 2-Don Stevens; 3-Mrs. Frances W. Brown.

Locality—1-Jack Streeter, Mammoth Mine, Arizona; 2-Earl Calvert, England; 3-Louis Vance, Bisbee, Arizona.

XL Groups—1-W. J. Perkin; 2-W. J. "Jack" Rodekohr.

XLS Single or Twin—1-J. S. Diederich.

Polished materials, Cabochons and Flats—1-Quita Ruff; 2-Collection of the late Oliver Saylor, entered by his daughter; 3-Mr. and Mrs. R. E. Heidrick.

Rock types—1-Pasadena junior college, entered by Stanton J. Hill.

Novelties, Spheres, etc.—1-Mrs. May Duquette; 2-Ralph Dietz; 3-Frank A. Bahr.

Jewelry—1-Mr. and Mrs. R. E. Heidrick.

Honorable mention—1-Fred W. Kroger, gold specimens; 2-Carl Aicholz, Alaskan artifacts.

All officers were reelected to serve another year. Paid membership is now 168. Meetings will be held throughout the summer.

GEM AND MINERAL SECTION ORGANIZED BY BUFFALO GROUP

Because of interest shown at preliminary meetings, a group of men and women have organized a Gem and Mineral section of Buffalo Society of Natural Sciences, to function under auspices of Buffalo Museum of Science. At the earlier meetings, Charles A. Randorf, local civil engineer, discussed gem cutting and displayed finished gems cut on simple machinery from inexpensive rough stones; Anderson Pace, Jr., of DuPont, gave a nontechnical talk on gemstone crystallography, and D. K. Winebrunner, of State Teachers' college, demonstrated making of a ring.

At the May meeting a charter was adopted and the following officers elected: Thomas G. Munroe, General Cable corporation, president; Edward L. Brady, E. L. Brady and Son, vicepresident; Mrs. Milford Grote, Deaconess Hospital, secretary; Walter A. Anderson, Hinde and Dauch paper company, treasurer; Charles Dargard, Manufacturers and Traders Trust company, and Charles A. Randorf, directors.

Summer group activity will consist of field trips to nearby mineral localities and practice in jewelry making. With opening of the museum's fall activity October 1, the group will resume formal meetings at the museum, with a program of speakers on various phases of gem-cutting and mineralogy. Also at that time the group will resume use of the museum's complete gemcutting equipment.

Interested persons living in the Frontier area wishing further information are invited to write or telephone any of the officers or directors.

VARIETY MARKS PROGRAM OF SOUTHEAST HOBBY CLUB

Southeast Hobby Society of Huntington Park recently enjoyed an outstanding program featuring the various divisions of the club. More than 125 members and visitors attended.

Dr. Clinton Hubbard, conchology chairman, lectured on his exhibit of sea shells, rarest of which was a golden cowry which had been presented to him by Mrs. Hubbard on their golden wedding anniversary.

W. L. Jackley, chairman of fossil division, carried his audience back millions of years when giant turtles and other monsters reigned. His specimens were from Wyoming badlands.

A. E. Allard, mineralogical chairman, entertained with "the finest set of colored slides on gems and minerals in the Southland." C. L. Matteson, chairman of exhibits and fluorescents, turned his ultra-violet lights on such specimens as benitoite, neptunite, diopase, sulphur crystals and jamesonite. Mrs. Matteson exhibited gem beads of tiger eye, rose quartz, amethyst and turquoise. She also had cut and polished bookends.

John A. Jones, chemist of the mineral division, exhibited native gold ore, sphalerite, pink calcite, malachite, wulfenite, cinnabar, silver, tourmaline, etc. In the junior division, Allen Titmus displayed Herkimer diamonds, howlite, tungsten minerals, magnetite, etc.

The following officers were elected: Wendell G. Thompson, president; Harry L. Shetler, vice-president; Adolph W. Meyer, 2nd vicepresident; Mrs. Thompson L. Baker, secretary, and Saul Oster, treasurer. Mr. Baker was chosen parliamentarian, and executives elected were C. L. Matteson, H. H. Kollmeyer, "Clover Charley" French and Roberta Smith.

SEVENTY ROCKHOUNDS ON TELESCOPE PEAK CLIMB

Seventy persons made the weekend trip June 16-17 to Wild Rose canyon, Death Valley, for the third annual Telescope Peak hike sponsored by Searles Lake gem and mineral society. Thirty completed the climb to the top of the 11,045 foot mountain, according to Harvey Eastman, field trip director.

Actual ascent began from Mahogany Flats at 8 a.m. and most of the hikers had reached the top before noon. Ted Goodwin, son of T. R. Goodwin, superintendent Death Valley national monument, and Newell Merritt of Argus were among the first to reach the top and sign the Sierra Club register.

After the hike the party had dinner at Wild Rose Canyon station, where Mr. and Mrs. George Pipkin also had prepared breakfast for the group. Saturday night a motion picture of Death Valley was shown.

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BEAUTIFUL KENTUCKY FOSSILS. 25 Rhynchotrema and Platystrophia, \$2.00. Delicate brachiopods on 3x4 limestone slabs \$3.50. 2 different \$5.00. Postpaid. George Bryant, Route 2, Lawrenceburg, Ky.

A REMARKABLE DISCOVERY. A scientifically minded collector in Pa. has found a combination of minerals and rare earths fused in a gray crystallized slag which fluoresces a strong orange and pink with occasional blue and reddish phosphorescence under short wave lamps. A specimen of this rare and unusual material should be in every fluorescent display. Special introductory offer, for one month only, \$1.00 per pound postpaid. Guaranteed and handled exclusively by Thompson's Studio, 385 West Second Street, Pomona, California.

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Colorado plume agate, sawed slabs, \$1 to \$30. All on approval. This is a new find, none better. Priced according to size and beauty. The Colorado Gem Co., Bayfield, Colo.

WASHINGTON PETRIFIED WOODS. Many color combinations and varieties. Six slabs, One dollar plus postage. Over twelve square inches. State preference. Cabochons or specimens. Money back if dissatisfied. Full log sections available. Native Gems, 111 No. Tacoma Ave., Tacoma 3, Washington.

Beautiful Selenite specimens. Three large specimens \$5.00, Black Satin Luster, Sheet Selenite, 1 large crystal. 6 large beautiful Colorado specimens, all for \$6.00. A 6 lb. box of beautiful assorted Colorado specimens, very nice, \$6.00. Jack the Rockhound, P. O. Box 86, Carbondale, Colo.

BEAUTIFUL KENTUCKY FOSSILS. Assortment of 12 different specimens. 4x4. A real buy, \$7.00. Postpaid. George Bryant, Rt. 2, Lawrenceburg, Ky.

ARIZONA QUARTZ CRYSTAL CLUSTERS. Not glass-clear type, but beautiful. From 3 to 20 point groups. Doubly-terminated single crystals with, without other crystals attached at various angles. 50c to \$4.00. Single crystals pointed one end only 2 dozen \$1.00. Crystal oddities, specially priced. ARIZONA BARITE coated with azurite. Not spectacular, but rare. 10c to \$1.00. Postage extra. Minimum order \$1.00. Mrs. Maryann Kasey, Box 230, Prescott, Arizona.

Wanted: to buy, sell and exchange specimens outstandingly rare and beautiful. Sam Parker, 2160 East Van Buren, Phoenix, Ariz.

MONTANA MOSS Agate in rough for gem cutting and specimen. 50c to \$1. per pound, plus shipping cost. Also can supply Jade, Jasper and Petrified wood. E. A. Wight, P. O. Box 1318, Billings, Montana.

INDIAN RELICS, Curios, Coins, Minerals, Books, Old Buttons, Old Glass, Old West Photos, Weapons, Catalogue 5c. Lemley Antique Store, Osborne, Kansas.

WILL EXCHANGE or buy for cash, polished agate, flame wood, highly colored jasper and any colorful cabochons suitable for bracelet or ring sets. Have finest Tri State district Xled specimens for exchange, no checked stones accepted. Will pay good prices for agates with good markings. Boodle Lane, Box 331, Galena, Kansas.

Colorado Desert Minerals: Anthophyllite, a beautiful woodlike amphibole mineral, fair size chunk \$1.00. Vanadinite-cherry-red, 50c up. Perlite, 50c. Fluorescent — red — calcite 50c. 6x3x2 in. banded fluorite with ribbon of red fluorescing calcite in center, \$3.00. Chalcedony roses, 25c. Apache tears, 25c. Assortment of geodes, some have the appearance of pine cones, very odd. Prices according to size. For cutters: Palmwood, jaspers, agate, copper mineral complex, has hardness of 5, 35c per sq. in. Postpaid in U. S. Correspondence invited. Desert Blossom Rocks, Box 356, Wintertown, Calif.

AGATE JEWELRY AND OREGON AGATES — Ladies 10k gold rings, pointed or oval type, \$14.40 including excise tax. We make pendant necklaces, brooches, rings of several types. Sell plume and other agate by the slab. We guarantee satisfaction or will refund your money upon receipt of our merchandise. See that funds accompany your order. E. Lee Sigfrit, 211 Congress, Bend, Oregon.

\$2.50 brings you prepaid six rare and beautiful crystallized Arizona minerals. Vanadinite, Diopside, Wulfenite, Willemite, Chrysocolla, Azurite. Specimens 1½x2 or larger. Wiener Mineral Co., Box 509, Tucson, Arizona.

Choice Palm Root—Full of eyes showing root and trunk structure. Very colorful. Sliced for Cabochons. 25 cents per square inch. Satisfaction guaranteed. GASKILL, 400 North Muscatel, San Gabriel, Calif.

Minerals, Gems, Coins, Bills, Old Glass, Books, Stamps, Fossils, Buttons, Dolls, Weapons, Miniatures, Indian Silver Rings and Bracelets. Also Mexican. Catalogue 5c. Cowboy Lemley, Las Cruces, New Mexico.

Mineral Sets—24 Colorful Minerals (identified) in 1x1 compartments—Postage paid, \$3.50. Prospector's Set of 50 Minerals (identified) in 1x1 compartments in cloth reinforced sturdy cartons. Postage paid \$5.75. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

Good cutting material, Petrified Wood, Agate, Jasper, \$1.00 per lb. Special mixed lots \$4.00 for 5 lbs. Variscite specimen material \$1.00 per lb. and up. Geodes and Ribbon Rock, 5 lbs. for \$2.00. Please include postage. John L. James, Tonopah, Nevada.

Montana Moss Agates in the rough for gem cutting, \$1.00 per lb. plus postage. Elliott's Gem Shop, 26 Jergins Arcade, Long Beach 2, Calif.

AMONG THE ROCK HUNTERS

K. E. Bensusan, Australian mining engineer, was to be the speaker for Los Angeles mineralogical society at its July 19 meeting. His subject: "An Investment of \$14,000,000 in Brazilian Iron—What it Means."

At the May meeting of Long Beach mineral society, Mrs. J. Wilson spoke on emeralds, and Mr. Webb spoke on beryllium, the modern miracle metal. A field trip to Corona and Del Mar was arranged for June 17 by Mr. Axtel.

"Arizona—Its Mineral Resources and Scenic Wonders" is the title of a motion picture shown through the courtesy of the Bureau of Mines and Phelps Dodge corporation at June 19 meeting of Pacific mineral society, Los Angeles. It included views at representative Arizona mines, national monuments, irrigation systems and agricultural areas. J. F. Underwood, secretary of the society, arranged a display from his mineral collection.

Southwest Mineralogists, Los Angeles, have elected the following officers for 1945-46: Dorothy C. Craig, president; Kenneth Dartt, vice-president; George Schwartz, treasurer; Herbert Collins, recording secretary; Marie Stager, corresponding secretary. Directors include above officers and Harold Eales, Leo Cotton, Sam Boase.

W. Scott Lewis, 2500 N. Beachwood Dr., Hollywood 28, Calif., says in his June bulletin that he has a small supply of shells still remaining which he will send free of charge to children if they will send 15c for mailing, plus postage, or they may be called for in person. These shells have been donated by friends who want to help interest young people in nature study. Shells are all correctly labeled.

Any rockhounds who will be in Denver this summer are invited to the field trips to be conducted by the Colorado mineral society. First trips were on June 10 and July 22. Secretary is Miss Alice Gathercole, 4557 Zuni St., Phone GLendale 3321, Denver.

Los Angeles lapidary society has elected following officers for the coming year: A. B. Meiklejohn, president; Mrs. Belle Rugg, 1st vice-president; Harry Ringwald, 2nd vice-president; Mrs. Willella Gunderson, secretary; Thos. A. Daniels, treasurer; Leland Quick, historian.

Walter Bradley, state mineralogist, spoke on commercial minerals of California at June 7 meeting of East Bay mineral society, Oakland. Their June 23 meeting was in form of a chicken dinner, followed by exhibit of specimens by members. J. Lewis Renton, San Francisco, was exhibit chairman.

East Bay mineral society installed the following officers at June 23 dinner meeting: Robert O. Deidrick, president; N. Spencer, vice-president; D. E. Cameron, secretary; Wesley Mayder, treasurer; Orlin J. Bell, L. J. Hostetter, directors. J. Lewis Renton has another year to serve as director.

MEXICAN FIRE OPAL and fine specimen opal, all colors, Tiger's Eye, Brazil Carcilian, slab Chrysocolla, Ceylon Sapphire, Mexican gem Amethyst, Baddeleyite pebbles, Zirconian. Money back if not satisfied. The Desert Rat's Nest, 2667 E. Colorado St., E. Pasadena 8, California.

June issue of New Jersey mineralogical society bulletin states that the Newark Museum, in addition to having excellent mineral exhibits, is doing a fine job of teaching and encouraging study of mineralogy.

At the annual Fresno meeting June 9, members of Sequoia mineral society were entertained by Fresno members of the society at a potluck dinner held at Fresno state college. George L. Gary, state mineral technologist, spoke on unusual commercial minerals of California, illustrating his talk with kodachrome slides. An exhibit was held after dinner.

H. C. Tillman gave a lecture on Carlsbad Caverns, illustrated with his many beautiful pictures, at June 11 meeting of Kern county mineral society, Bakersfield. Mr. VanderEike, Mr. Little and Dr. Grosbeck gave five minute talks on "My Most Interesting Specimen."

Orange Belt mineralogical society held June 11 meeting at Pinetum, Sylvan Park, Redlands. New president Peter Burk displayed splendid collection of polished rocks. A grab bag and trading post session followed the afternoon covered-dish dinner. Thirty-two members and guests were present.

Forty members of Seattle gem collectors club displayed jewelry they had made, at the June 19 dinner meeting, held in chamber of commerce building. There were 117 in attendance. Mrs. Lloyd Roberson was in charge of the program, which included talks by Miss Runkel, jewelry class teacher, Mr. Uhlman and Mr. Allen. Plans were made for a joint picnic with Tacoma agate club to be held at Salt Water park August 12. An invitation was extended by the Jack Landons to have a picnic at their summer home on the Sound July 15.

From Picher, Oklahoma, comes a report of the discovery of a rich deposit of galena, lead sulphide, a few miles west of the present field. This deposit is deep but very rich. Some fine cubes and cleavages have been taken out already.

Garnierite, hydrous silicate of nickel and magnesium, often occurs as beautiful green crystals, or dark green masses. American sailors and soldiers find that the island of New Caledonia produces quantities of this ore, that it ranks second in the world as a producer of nickel.



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6 x 1 -inch.....	2.40	2.60
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10 x 1 1/2-inch.....	7.00	7.50
12 x 1 -inch.....	6.90	7.50
12 x 1 1/2-inch.....	9.60	10.40
12 x 2 -inch.....	12.30	13.30

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FELT POLISH WHEELS—Spanish White Felt . . . made expressly for us by Byfield Felting Co. These wheels are the proper hardness for polishing gem stones and flat specimens.

6 x 1-in.....	\$4.25	10 x 1 -in.....	\$11.00
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Arbor hole sizes: 1/2", 5/8", 3/4", 7/8", 1".
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Width	Price per Ft.	No. Ft. per \$	Price per 150 ft. Roll	Roll Ship. Weight
2"	5c	24 ft.	\$ 4.70	3 lbs.
3"	7c	15 ft.	6.90	5 lbs.
8"	17c	7 ft.	18.00	12 lbs.
10"	22c	6 ft.	22.00	15 lbs.
12"	25c	5 ft.	26.50	20 lbs.

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Fluorite, Octahedrons, Illinois, yellow, purple, some with inclusions .10 to \$4

Velvet Malachite, Arizona, beautiful dark green crystals on matrix .25 to \$3

Galena & Sphalerite, Kansas .25 to \$20

Pink Chalcedony, New Mexico .15 to \$1

Descloizite, Mexico, brownish to black crystals, 1 each: 3 1/2 x 2 \$2.50, 4 x 2 \$4.50, 2 x 3 \$4.50, 5 x 3 1/2 \$8.00.

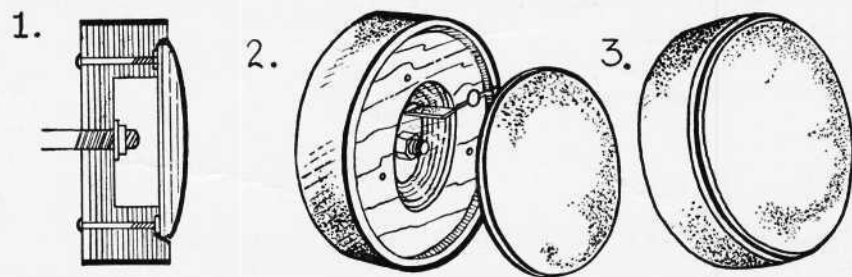
Gypsum Crystals on Calcite & Sphalerite, Kansas, 1 1/2 x 1 1/2 to 2 x 2 1/2 priced according to crystals .50 to \$2.00, very unusual and nice for a cabinet specimen.

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The DUO SANDER is easily placed in position by first attaching the drum part to either end of the arbor shaft. The disc fits into the recessed open side of the drum and is substantially held in place with three bolts from the back side of the drum. The bolts screw into plate nuts attached to the inside of the disc.

DUO SANDER—2" wide, 9" diameter, shipping wt. 3 lbs.—\$5.50 plus postage

DUO SANDER—3" wide, 9" diameter, shipping wt. 4 lbs.—6.50 plus postage

Extra wooden discs ready for use to fit above—\$2.00

OUR REGULAR DRUM SANDERS

7" diameter x 2" wide, shipping weight 2 lbs.—\$2.50 plus postage

8" diameter x 2" wide, shipping weight 3 lbs.—2.75 plus postage

8" diameter x 3" wide, shipping weight 4 lbs.—3.75 plus postage

9" diameter x 3" wide, shipping weight 5 lbs.—4.00 plus postage

Arbor Hole Sizes for Drum Sanders All Styles, 1/2, 5/8, 3/4, 7/8, 1-in.

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Texas mineral society, Dallas, at their regular June meeting elected the following officers: Raymond C. McIver, president; J. D. Churchill, vicepresident; A. O. Phipps, secretary-treasurer. Mrs. Wm. LaDew and Mrs. J. D. Churchill were elected new directors to serve the coming year.

Annie Waggoner and Edythe Maloney, members of Searles Lake gem and mineral society, are now second lieutenants in the Nurses Corps.

Fluorescence was the subject of George LeMoine's talk before the Gila mineral society, Miami, Arizona, on June 21. He demonstrated fluorescent qualities of specimens with a mineral light. H. O. Coles, at the June 7 meeting, had discussed various methods of assaying gold. Gila mineral society meets every other Thursday evening at the YMCA. All persons interested in minerals are invited to attend.

Fourth annual show of Los Angeles lapidary society (see details in July issue of DM) was continuing to draw large crowds up to its closing date July 1, when an estimated 30,000 persons would have seen the display of all phases of the lapidary art. Officials of Los Angeles museum, where the show was held, have invited the society to make the exhibit an annual event at the museum.

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50 RING STONES, including genuine and synthetic . . . \$7.50
SYNTHETIC RUBIES or GENUINE GARNETS, per carat . . . \$1.25
CAMEOS or OPALS—Genuine—12 for \$3.75
etc., \$2.40; 50 large ones . . . \$2.40
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Plans for a fall and winter program were made by members of Desert gem and mineral society, Blythe, at their final meeting of the year June 11 at the home of Mr. and Mrs. Norman Brooks. Next season will start September 10.

Cogitations . . .

Of a Rockhound

By LOUISE EATON

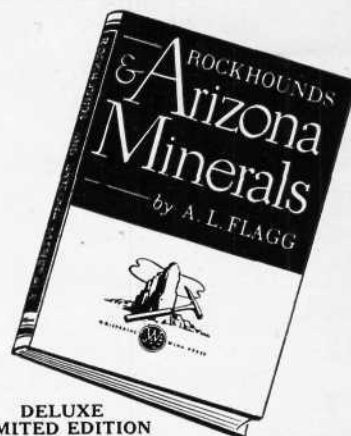
True rockhouns an' commercial rockhouns is alike in sum respects an' diffrent in others. They both desires good specimens an' 'll go a long way to find um, but dyed-in-th'-wool rockhouns whose beans an' bacon don't depend on sellin' rox are satisfied if they gets jus wun super rok in a day's haul. On th' contrary, commercial dealers has to find their specimens in quantity so as to acquire an adequate supply uv material for barter. Rockhouns an' their business brothers is, however, interdependent. 'Twould not be convenient for either to function without th' uther.

"Omigosh," groans th' baggage checker, "What's in this suitcase! feels heavy as rox."

"It *is* rox," admits th' travellin rockhoun, feelin sorta sheepish. But dija ever know a rockhoun who could go places without a copy uv Dana in his suitcase or who could get back home without visitin all possible rok localities an fillin his luggage with new specimens!

When the present batch uv pebble pups grows up they'll be mighty well informed on th' subjeck uv rox an' minerals. Almost always it's th' bright eyed kids on a field trip who picks up th' best specimens. Their minds is in th' receptive an' retentive stage where they learns easily an' remembers. Even toddlers in rockhoun homes gathers in rox an' takes um to th' grownups demandin, "Talk rox now. Talk rox."

INTRODUCING--



A Fellow of the American Association for the Advancement of Science and President of both the Rocky Mountain Federation of Mineral Societies and the Mineralogical Society of Arizona, Mr. Flagg has been a "Rockhound" for half a century, forty of which have been devoted to the minerals of Arizona.

In this fascinating new book, of which only a limited edition has been printed, Mr. Flagg presents in five parts a wealth of constructive facts and information that will be invaluable to both the novice and the experienced "Rockhound."

- Part 1 The Rockhound and his hobby. What, where, how to collect. How to identify and care for specimens. How to enlarge a collection.
- Part 2 Common minerals of Arizona with complete identification key.
- Part 3 Common rocks of Arizona with table of igneous rocks.
- Part 4 The amateur Lapidary.
- Part 5 Mineral Societies.

Also bibliography and complete list of Arizona Minerals.

Beautiful in typography, cloth-bound and illustrated with interesting sketches and with plates of Arizona minerals and polished stones, faithfully reproduced in true colors from natural color photographs "Rockhounds & Arizona Minerals" is a handsome addition to your library as well as an invaluable handbook.

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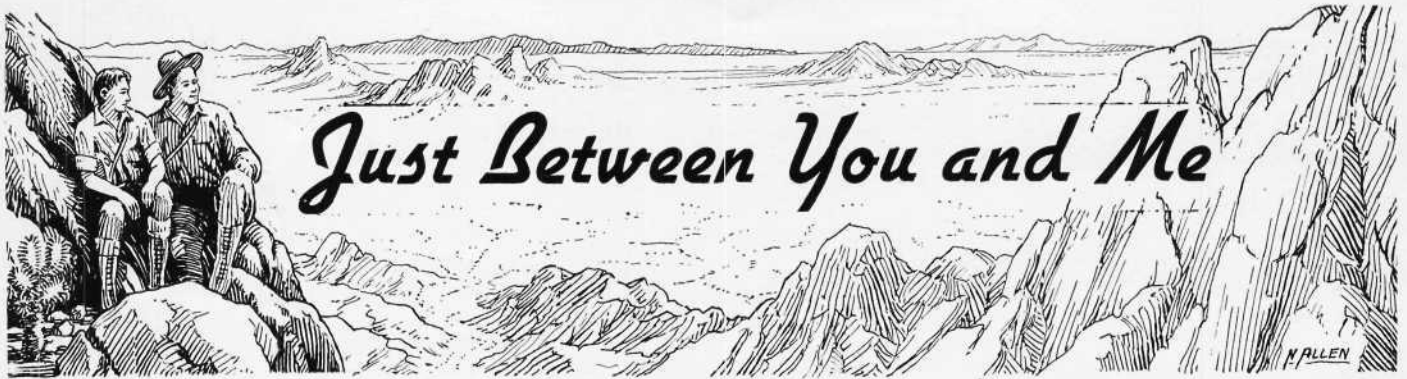
NOTE!

Please do not send postal notes, as they are not redeemable in Alaska post offices

ANSWERS TO DESERT QUIZ

Questions are on page 16

- 1—Limestone.
- 2—Yucca roots.
- 3—Putting her husband's belongings out on the doorstep.
- 4—Bugs and insects.
- 5—Guide and trapper.
- 6—The Hohokam.
- 7—Nogales.
- 8—Great Salt Lake.
- 9—Saguaro.
- 10—Igneous.
- 11—New Mexico.
- 12—Copper mine.
- 13—Cartoonist.
- 14—Father Kino.
- 15—A tribe of Indians.
- 16—Hopi.
- 17—John Wetherill.
- 18—Its historic inscriptions.
- 19—Turtle mountains of California.
- 20—North.



By RANDALL HENDERSON

LATE IN June I returned from one of the most interesting assignments in my experience as a reporter for *Desert*—a seven-day boat trip down the San Juan and Colorado rivers from Mexican Hat, Utah, to Lee's ferry in Arizona, with Norman Nevills and a party of his voyagers.

Riding fast water for seven days through one of the most colorful regions of the Great American Desert was an exciting variation after all the years I have been exploring the arid region in a jalopy. We rowed when we felt like it, ran a few tumbling rapids, did a fair share of bailing, dived overboard for a swim when it was hot, rode a driftwood log for the fun of it, climbed the sandstone cliffs, explored the side canyons—and tried our best to eat the skipper's flapjacks. Norman is the world's champion boatman—and its worst flapjack cook. But with the exception of that morning when he served shoe-leather hotcakes, the grub was fine. The trip was a glorious adventure in one of the least-explored regions of the West.

I took the portable typewriter along, and will write the story for the September issue of *Desert*. The pictures are not ready this month.

By pooling our gas coupons, Weldon Heald and I were able to make the trip to Mexican Hat by automobile. This was my first opportunity in three years to greet some long-time friends of the Indian country—folks who also are known to many other *Desert* readers.

* * *

We stopped overnight at the Top o' th' Pines lodge near Prescott, Arizona, where Ida and Moulton Smith, former California rockhounds, last August took over a neglected cabin hostelry in a beautiful setting of pine timber and are converting it into a haven of cleanliness and comfort.

Moulton formerly was an auto mechanic at Van Nuys, suburb of Los Angeles. He and Ida did what many folks in the metropolitan areas dream about doing. They cut loose from the smug security of a steady job, burned their bridges behind them, and went out looking for a new home and a business of their own in a mountain recreational area.

They found their opportunity at Prescott. They are working long hours—but they also have time to search for specimens for their mineral collection, and they are learning the names of the trees and flowers and birds that live in their mountain dooryard. Their accommodations are modest, but their enthusiasm is unbounded. They are having a grand time—and they'll make a success of their venture.

In Prescott I visited the office of the Yavapai Associates, a cooperative group of civic organizations whose job is to tell the world about the climate and recreational attractions of Yavapai county. Grace Sparkes, dynamic secretary of the group, is preparing amunition for the postwar travel period. The timbered plateau and range country of Prescott is a vacation paradise in summertime. I only hope they have enough accommodations for all the people who will be going there for outings when the ration books are discarded.

* * *

North from Prescott we took the route through colorful Oak Creek canyon. As usual, the trout fishermen were having poor luck along the creek—but the canyon was gorgeous, as it always is. That is a place to take kodachrome pictures and write poetry—not catch fish.

Then we went on through Flagstaff to Cameron on a bluff overlooking the Colorado river. Hubert and Mrs. Richardson, who are almost as much an institution at Cameron as their painted desert landscape, were not at home, and there were few tourists in the trading post, but the Hopi Indians who were running the coffee shop and doing the housekeeping seemed to have everything under control. The Richardsons maintain a refreshing little oasis of comfort and cool drinks for the motorist who has traveled long dusty miles in the summer sun.

The huge piles of Navajo rugs usually on display in the Cameron trading post were missing. The Indians are not making so many of them these days, and the prices have advanced 50 to 100 per cent over the prewar market. But even at 100 per cent increase the Navajo are not overpaid for their craftsmanship. In terms of man-hours, Navajo weaving is the biggest value one can buy in the United States, even at the advanced prices.

* * *

We crossed the Little Colorado and took the well-graded gravel road north toward Tuba City, Kayenta and Monument valley, and stopped for lunch with Katherine and Bill Wilson, formerly of Rainbow lodge. Bill is doing a wartime shift as custodian of the Betatakin and Keetseel ruins in Navajo national monument while Jimmy Brewer, the regular custodian, toils with the Seabees in the Pacific. Bill did his tour of war duty in the Philippines in 1898.

Like everyone else, Bill and Katherine are eager for the coming of V-J day, so they can return to Rainbow lodge, which has been closed the past three years. Barry Go'dwater, serving with the Air Corps, has acquired the Hubert Richardson interest in the lodge, and he and the Wilsons plan to reopen it and improve the roads to accommodate the postwar travel to this scenic part of Arizona and Utah.

Tragic changes have taken place since my last visit to Kayenta. With the passing of John Wetherill and his partner, Clyde A. Colville, the Kayenta trading post has been incorporated and sold to Bennett S. Hyde, and Charles J. and R. G. Babbitt of Flagstaff, with Bennett as trader in charge.

Mrs. Wetherill and son Ben were packing the priceless relics of many year's accumulation in the Indian country, preparatory to departure from a home which during the lifetime of John and Louisa has entertained noted guests from all over the world. Mrs. Wetherill told me she probably would go to Phoenix. Her fine ethnobotanical collection and notes from the Navajo country, on which she spent many years research, probably will go to Stanford university for publication, she said.

In Monument valley the trading post was closed, and the Navajo on guard duty spoke only two words of English we could understand—and since Weldon and I knew not a word of Navajo we resorted to a sort of mongrel sign language.

When our Indian host counted up to seven on his fingers and pointed over the hill, we decided that Mike and Harry Goulding would return from their vacation in seven days. But we guessed wrong. Later in talking with other motorists we learned the Navajo had been giving out this same information for the previous 10 days.

When we tried to get into one of the stone cabins for a night's lodging, the Navajo said "three." So we gave him three dollar bills and moved in—and his grin assured us we had guessed right this time and the parley came to a successful conclusion.

We spent a pleasant evening at the post despite the absence of the host and hostess—and I hope Mike and Harry are having a lot of fun on their "seven" day vacation.

* * *

When we arrived at Mexican Hat the following day we found Norman Nevills perched in a little cage on a cable high over the swirling waters of the San Juan taking his daily readings of volume and velocity and silt-content of the water. He is resident engineer for the U. S. Geological survey at this point and it is from the data compiled by him and scores of other observers along the Colorado and its tributaries that the federal government is able to make its plans for the control and utilization of this great river system.

The boatmen who were to pilot us down the river were making final preparations for the trip and Doris Nevills the skipper's wife was making up the week's camping menu. Every meal is planned in advance and Norman carries a typewritten sheet listing the number of cans of fruit juice, soup, meats, vegetables and fruit allotted to each meal. Thanks to her careful planning and a generous ration board we had an ample supply of good food.

Mexican Hat, which derives its name from a sombrero-like rock on the nearby horizon, is not much of a settlement according to civilized standards. Normally the only residents of the barren bluff are the Nevills family—Norman and Doris and their two daughters, Joan aged eight and Sandra aged four, and Norman's mother, Mae Nevills, who manages the eight-room lodge and a few cabins, all built of native stone.

Oil has been found in the vicinity, and drilling crews come and go—but the permanent residents are all Nevills. There is neither store nor school, and the nearest doctor and postman are at Bluff 27 miles away.

Joan's teacher is her mother, and Sandra soon will be going to the same school in the Nevills living room. I wish those Desert readers who have been worrying about the raising of children under such isolated conditions as surround the Marshal Souths and the Norman Nevills, could know Joan and Sandra. Any parent anywhere, could be proud of youngsters with such health and intelligence and freedom of spirit. Their discipline comes mainly from the environment in which they live—and Nature is a wise and understanding disciplinarian.

Perhaps some day the Nevills children will have to readapt their lives to the artificial environment of a more crowded community.

But I have no misgivings as to that. For, in the surroundings in which they are spending their formative years they are acquiring a reservoir of health and self-reliance and discipline—and plain common sense—that will serve them in any contingency.

I would not want to raise children in the poverty of a tenement district nor in the ugliness of some of the mining camps I have seen. But aside from these extremes of ill-environment I believe the KIND OF PARENTS is a hundred times more important than the PLACE in which a child is raised.

Mae Nevills is a gray-haired frontier woman who faces the problems of her remote roadside hostelry with a cheerful philosophy that is most refreshing. Her laundry had burned a few days before I arrived in Mexican Hat. There was no fire department to put out the blaze and she was still wearing bandages

over the burns she received when she tried to fight the flames alone. But she was smiling through the bandages.

The Navajos call her "*Shi-mah-yazzi*, my little mother." She feeds them when they are hungry and helps them when the *chindee* has brought them ill. She is a good samaritan in the heart of a vast arid desert doing what she can for those in trouble, and it makes no difference whether their skin is red or black or yellow or white.

At Lee's ferry when we reached the end of our journey we ate lunch in the ramada of Frank Dodge, veteran river man who takes the readings for the USGS at that point. Waiting for us on the sandbar where we grounded the boats were Harold Bryant, superintendent of the Grand Canyon national park, and Mrs. Bryant. The Bryant car was stocked with cold drinks, and it was a welcome treat for we landed in a sandstorm, the first unpleasant weather we had on the trip.

At Marble Canyon lodge, near Navajo bridge over the Colorado, a few miles below Lee's ferry, we found new proprietors in charge. Mr. and Mrs. A. H. Green have taken over this desert oasis of good food and clean shelter, to be operated by themselves and their three sons, two of whom are still in the service. It was refreshing to come out of the sandstorm and into the spacious lounging room of the lodge, richly decorated with Indian crafts and trophies of the desert country. Travel is light now, but the Greens will have plenty of customers later, for they provide the kind of accommodations that soon become known through the tourist grapevine.

At the Gap trading post, Johnny O'Farrell, veteran of many years on the reservation, was preparing to take a long vacation. He had sold the Gap store to Jack Owens, formerly of Navajo mountain, and his Copper Mine trading post to C. F. Thompson of Los Angeles. O'Farrell, who has long been one of the most popular traders in the Indian country plans to make his future home at Tustin, California.

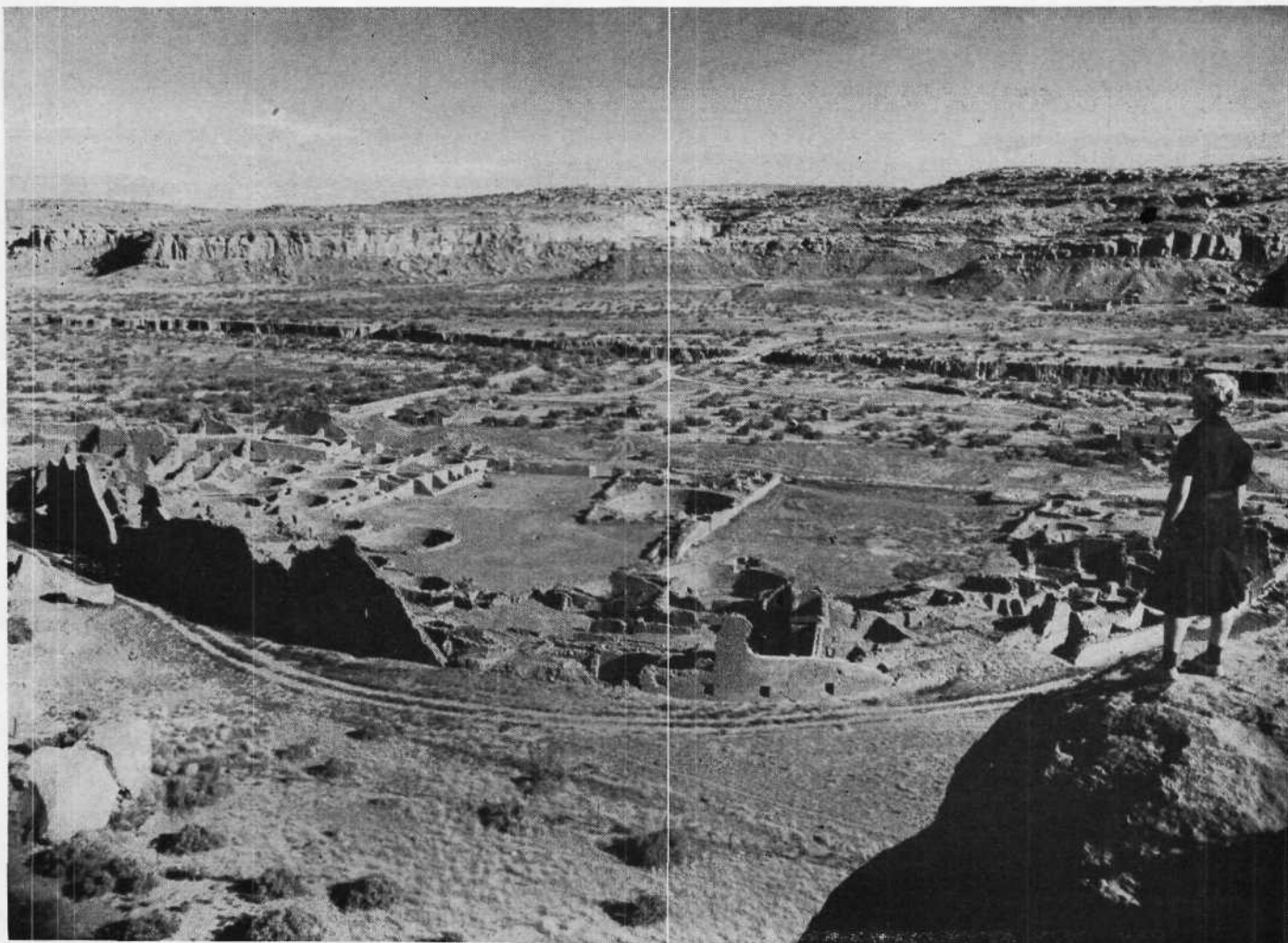
* * *

Placards on the walls of many of the trading posts offered \$10.26 a day for laborers to work at the Marine depot at Barstow, California. That is fabulous pay compared with the pre-war, or even the present income of a Navajo Indian engaged in sheep raising and weaving. But not many of the Navajo are taking the job—and in most cases they remain only a few weeks. Most of the younger Indians, who would be attracted by such wages are in the armed forces.

The war has brought closer contact between Indo-Americans and Anglo-Americans—both in the armed services, and in civilian activities. Large numbers of Indians, having drawn the same high pay as their white associates engaged in war production, and having lived for extended periods away from the reservations, will find the meager economy of the Southwestern reservations less endurable in the years ahead. My conclusion is that while this may complicate the immediate problems of the U. S. Indian service, it will be an important contributing factor in the long-range solution of the Indian problem as a whole.

For I am one of those who believes that the ultimate solution lies in the direction of complete assimilation of the Indian into the cultural and economic life of the United States. It is inconceivable to me that the Indians will forever be confined to reservations, with a culture completely apart and an economic level far below that of their white neighbors. If in the process of absorption the best in the Indian way of life can be preserved, then both races will be the gainers.

The change will require many generations. It would be a mistake to try to force the issue. Today, the great majority of Indians could be admitted to the white man's social and economic order only as laborers and menials. That would be unfortunate for both races. The transition must come only as the Indian through education and adaptation is prepared to take his place in the white man's society with all the dignity inherent in his race.



Pueblo Bonito in Chaco Canyon, New Mexico. Photo by Josef Muench.

THE PAINTED DESERT

By GEORGE L. WILLIAMS
Flagstaff, Arizona

With easel set, the artist stands beside the
Painted Desert,
Waiting for the dawn's first rays to clarify its
hues.

He thinks to paint a masterpiece of this chaos of
color
But falters at the shading of its purples and its
blues.

As the sun mounts swiftly higher o'er this
land of ancient fire,
The hills and valleys lay benumbed in glacial
cold,

The artist waits, bewildered at the swiftly chang-
ing picture
As the purples turn to yellows and the yellows
turn to gold.

When the sun has reached its zenith and the
landscape lays a-shimmer,
And the fantasy of color fades into a tawny-grey,
Then the mirage works its magic. Tiny mound
becomes a mountain,
And a yawning chasm opens where the level
valley lay.

Swiftly evening shadows lengthen; steal across
this lonely land,
And the humbled artist, sleeping, dreams no
more of being great.
Thru the desert's revelation he has learned his
limitation:
God alone achieves the perfect; man can only
imitate.

Ruins

By DOROTHY ROGERS OLD
Pittsburgh, Pennsylvania

Oh, crumbling ruins defying Time's great hand,
You stand and furnish me a gloomy trace
Of vanished tribes who once lived on this land,
You breathe the secrets of a vanished race
And warn me of the swiftness of Life's pace,
But Time's erosion weakens your thick crust
And slowly you are blending with the dust.

• • •

DESERT MOONLIGHT

By JENNIE R. AULTMAN
Trinidad, Colorado

Long shadows lie across the desert sand,
The twilight deepens, chilly grows the air,
In silhouetted form the rocks rise bare
And ghastly as if chiseled, and some hand
Had placed them there between the sky and
land;

The desert sun has disappeared, a glare
Still lingers in the sky as if to share
The cooling atmosphere near where they stand.
Reluctantly the sun withdraws her light,
And darkness closes down upon the scene,
While stillness reigns as desert birds take flight;
Then suddenly the moon with silver sheen
Leaps the horizon, lo! the desert night
With trailing robes comes forth, a beauteous
queen.

TO A NODULE

By JOSIAH NATHAN NUTTER
Long Beach, California
Oh, you were just an ugly rock
Until the lapidary's art
Revealed at last the hidden beauty
Held within your stony heart!

DESERT GARDEN

By JERRY M. DARRELL
Alma, California

If you must upon the desert dwell,
Take a hint from me.
If you cannot live without a garden, group
Cacti at the base of a Joshua tree.

Let there be cereus both low and tall,
And gargoyle growing opuntias queer,
A stately staghorn, a bisnaga pink,
And coryphantha dainty, dear.

Tall silvery cholla with its jumping spines
Beside a low, bristling grayhead,
An Opuntia ursina like a patch of snow,
With a parishia beside for a stain of red.

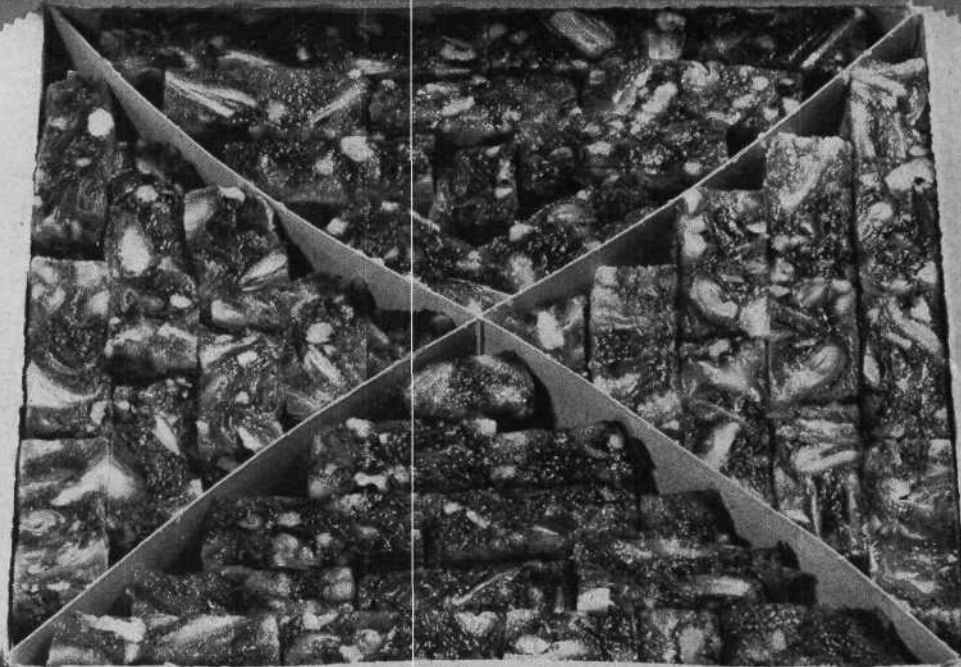
Group engelmannis with their purple bloom,
About barrels big and full and round,
Now scatter about your spiny plants,
Desert rocks of yellow, green and brown.

And when summer's strident heat
Beats upon the waterless land,
Everything will shrivel up,
But your gallant spiny band.

So if you must upon the desert dwell,
Take this hint from me.
If you cannot live without a garden, group
Cacti around a Joshua tree.



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